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SUELOS

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CEMENTO

CONCRETO

Soil Equipment

Soil Classification

Soil is one of the oldest forming structures that our planet is formed from. Soil is a loose rocky material that is vastly used in the construction industry. Hence it is very important to test the ground soil before construction and to know the type and classification of the soil before any project.

The type of soil can be identified by several parameters one of which the percentage of clay, silt or sand found in its composition. This classification will determine the characteristics of the soil used in the civil engineering project.

Other physical parameters such as moisture content, shear strength, elasticity, specific gravity, density, degree of compaction, penetration resistance, consistency, bearing capacity, hydraulic conductivity, permeability and consolidation can effect the soil characteristics and behaviour during construction.

The testing equipment described in this section are carefully designed and manufactured to the highest international standard necessary to achieve accurate and repeatable results in testing soil material.

The principle of soil mechanics requires the use of standard testing methods offered by our range of equipment and used by trained and qualified engineers and technicians.

Soil Colour Chart

The Soil Colour Chart is used to judge the color of rocks, archaeological specimens and soil samples. 322 color chips are permanently mounted on 9 charts for basic collection of 7 hues (10R-5Y) and 2 grey charts with apertures between chips to make comparisons easier.
The tropical soil colour chart Set of 2, for use with reddish tropical soils and recommended for tropical regions.

Washable new edition features handy tabs for flipping to needed charts without getting pages dirty.

SL 0101
Soil Colour Chart
SL 0102
Tropical Soil Colour Chart

Soil Sampling Kit

The Soil Sampling Kit is designed to obtain samples for soil investigation and exploration purposes.
Made of special galvanised steel the set provide all the items needed in a convenient carrying case.

The complete kit is based on the most popular sizes used for undisturbed soil sampling including cleaning brush and user manual.

SL 0103
Soil Sampling kit
SL 0104
Soil Prospecting kit
SL 0105
Hand Auger Head 80 mm dia
SL 0106
Hand Auger Head 100 mm dia
SL 0107
Hand Auger Head 150 mm dia
SL 0108
Extended rod 1 m long

Power Auger Head

The Power Auger Head has an Ergonomic designed for optimum comfort.

It comes with a 4.5 KW two stroke engine, equipped with a lever preventing accidental acceleration and a Quick-fit spigot-socket coupler for swift attachment and replacement of bits.

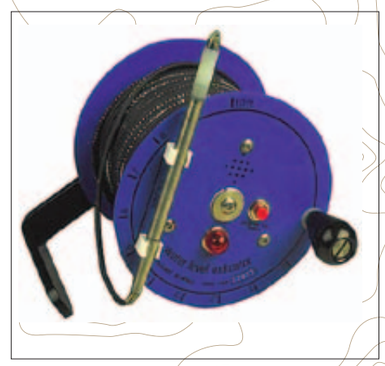
SL 0109
Power Auger Head

Accessories:
SL 0110
Auger 60 mm dia x 1 m long
SL 0111
Auger 80 mm dia x 1 m long
SL 0112
Auger 100 mm dia x 1 m long
SL 0113
Auger 150 mm dia x 1 m long
SL 0114
Auger 200 mm dia x 1 m long
SL 0115
Extension rod

Water Level Indicators

The Water Level Indicators are used to determine the water level in boreholes and wells.
Drum mounted, with an ON/OFF switch indicator and audio signal when probe touches the water.
The cable is marked at intervals and is battery operated.

SL 0116
Water Level Indicators 50 meters
SL 0117
Water Level Indicators 100 meters
SL 0118
Water Level Indicators 150 meters
SL 0119
Water Level Indicators 200 meters



Proctor Penetrometer (spring type)

Standards: ASTM D1558

The Proctor Penetrometer is used for determining the penetration resistance of fine-grained soils.
The unit consists of a special calibrated spring dynamometer with a pressure-indicating scale on the stem of the handle. It comes with a stainless steel adaptor stem for larger needles.
The pressure scale is calibrated to 100 lbs. by 1 lb. subdivisions.
There is a major division located at each 10 lb. interval. A sliding ring on the stem indicates the maximum load obtained during the test.

SL 0120
Proctor Penetrometer complete set with needle point

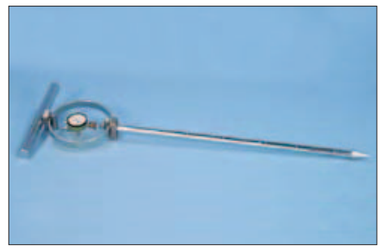
SL 0121
Set of spare needle point (0.25, 0.5, 1, 1.5, 2, 3, 5, 6 cm^2)

Proving Ring Penetrometer

The Proving Ring Penetrometer is used to determine the bearing strength, compacting degree of subgrades and also penetration resistance of soil.

It comes with a T handle 1 KN load ring, Maximum load pointer and calibration chart.

SL 0122
Proving ring Penetrometer complete



Pocket Penetrometer

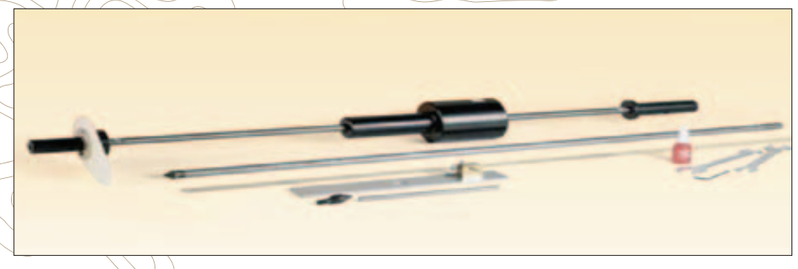
The Pocket Penetrometer is used in field exploration and in checking and comparing similar types of soil. Classifying cohesive soils in terms of consistency and estimation of approximate unconfined compressive strength and shear strength.

The cylindrical tip of 0.31 cm² area penetrate into the soil up to 6 mm marked point. A cursor on the scale reads directly unconfined compressive strength in kgf/cm².

SL 0123
Pocket Penetrometer

Dynamic Cone Penetrometer

Standards: BS 1377, 1924, 812, EN 932-1



The Dynamic Cone Penetrometer is used for In-rapid in situ measurement of structural properties of existing road pavement constructed with unbound materials.

It consists of an 8 kg weight dropping through a height of 575 mm and 60° cone having a diameter of 20 mm. DCP measurements can be made down to a depth of approximately 850 mm.

SL 0124
Dynamic Cone Penetrometer set

Static Cone Penetrometer

The Static Cone Penetrometer is used to evaluate the consistency of soils, their level of compaction and the bearing capacity of shallow foundations and pavement subgrades.

Specifically developed for use in fine grained soils, particularly soft soils, to depths of 30 feet. They use a 60° cone with an area of 1.5 cm². An optional cone with a 3 cm² area is available for use in very soft soils. Dual rod construction isolates cone resistance from shaft friction Pressure gauge ranging from 0 to 70 kg/cm² reads cone resistance directly, eliminating need for proving ring conversions. Stainless steel and anodized aluminium construction for reliable performance.

Standard models include:
A 60° cone with a maximum area of 1.5 cm²
A Starter Rod Assembly designed to withstand an axial force of 250 lbf (340 N • m) maximum
Pressure gauge marked in kg/cm²
Operating Instructions and parts list

SL 0125
Static Cone Penetrometer

Dial Penetrometer

The Dial Penetrometer comes in three different versions, the dial has a maximum value holding system with 0 setting by push buttom. The Dial dia is 60 mm, with peak holding features.

SL 0126
Range 0 to 5 kgf/cm2, plungers dia is 6.35 mm
SL 0127
Range 3 to 15 kgf/cm2, plungers dia is 6.35 mm
SL 0128
Range 0 to 6 kgf/cm2, plungers dia is 6.35 mm - 10 - 15 - 20 - 25

Pocket Shear Vane

The Pocket Shear Vane can be used in the laboratory, at the end of sample tubes, etc
Supplied complete with:
Standard 25 mm dia, vane range 0 to 10 N/cm2

Sensitive Vane adaptor, range 0 to 2 N/cm2
High capacity vane adaptor range 0 to 25 N/cm2
SL 0129
Pocket Vane Complete set

Field Inspection Vane Tester

Standards: ASTM D2573

The Field Inspection Vane Tester can be used to determine the maximum shearing force that can be exercised on a soil. Measurement in the field (on the surface, in profile pits or at the bottom of bore holes) as well as in the laboratory (on samples) are possible.

The shear stress measured can be read on a clearly readable scale ring. In soft soils it is not necessary to make a bore hole first. In order to determine the friction on the extension rods a dummy vane is available in these situations.

SL 0130
Field Inspection Vane complete set

Laboratory Vane Apparatus

The Laboratory Vane Apparatus is used to determine the shear strength in soft soil of undisturbed remolded samples.
Both manual and motorised versions are available Lightweight, compact, portable and self contained.

SL 0131
Manual Laboratory Vane Apparatus

SL 0132
Motorised Laboratory Vane Apparatus
SL 0133
Vane 12.7 mm x 12.7 mm
SL 0134
Vane 12.7 mm x 19 mm
SL 0135
Vane 12.7 mm x 25.4 mm
SL 0136
Attachment to hold a sample tube of 38 mm or 100 mm dia

Laboratory Mixer

Standards: BS 598-107, 1377-1, 1924-1, EN 12697-35

The Laboratory mixer is a planetary beater type, where the flat beaters rotate in the opposite direction to the orbit around the inside of the mixing bowl.

This ensures that the mixing is thorough and uniform. It has a direct gear drive transmission that may be set for three speeds with a control lever.

The hand lever can raise, lower and lock the bowl at the desired position. Adjustment is allowed for proper clearance between the bowl and the beater.
This Mixer is suitable for sample preparation of soils, bituminous concrete and cement mortars.

SL 0137
Laboratory Mixer 5 litre capacity complete with all accessories
SL 0138
Laboratory Mixer 10 litre capacity complete with all accessories
SL 0139
Spare stainless steel Bowl
SL 0140
Spare stainless steel Beater

Isomantle Heater

The Isomantle Heater is Used to heat the mixing bowl of (5 litres cap.) and (10 litres cap.) mixer.

It is fitted with an electronic temperature regulator and can be easily fitted to the mixer under the bowl. Max. temperature 180 °C

SL 0141
Isomantle Heater 5 litres cap
SL 0142
Isomantle Heater 10 Litres cap.

Porcelain Mortar and Rubber Head Pestle

The Porcelain Mortar and Rubber Head Pestle is used for sample reduction by gently crushing individual particles.

SL 0143
Porcelain Mortar and Rubber Head Pestle complete set

SL 0144
Spare Porcelain Mortar
125 mm dia

SL 0145
Spare Rubber Head Pestle

Laboratory Soil Grinder

The Soil Grinder Prepares soil samples to designated particle size for accurate, repeatable test results. Grinds one-pint sample in 15 seconds. Stainless steel construction. Includes a No. 10 perforated stainless plate.

The Soil Grinder is used in place of a soil mortar and pestle to quickly reduce cakes of dry soil for particle-size analysis. It is intended to grind the fraction retained on a designated sieve until the aggregations of soil particles are broken up into separate grains.

Continuous grinding is ensured by using the gate below the hopper to feed the soil at a rate that does not stall the motor.

SL 0146
Laboratory Soil Grinder

Melting Pot

The Melting pot is used to melt wax, or asphalt material used to seal the soil samples and other materials.

The temperature is adjustable and maintained at the desired value through the thermostat controler. Supplier complete with aluminum cover.
Made from cast aluminum material with a heat resistant knob.

Specify Temp:
- 60° to 250°C, 100° to 320°C
- 60° to 450°C, 150° to 550°C

SL 0147
Melting Pot 1/2 litre
SL 0148
Melting Pot 1 litre
SL 0149
Melting Pot 2.5 litre
SL 0150
Melting Pot 4.5 litre
SL 0151
Melting Pot 9 litres

Sieve Shaker

Standards: EN 932-5, ISO 3310-1

The Sieve Shaker imparts a circular motion to the material being sieved so that it makes a slow progression over the surface of the sieve.

At the same time a feature of the rapid vertical movement agitates the sample which helps to clear the sieve apertures and avoid them blinding.

The shaker is fitted with timer which can be pre-set for any duration up to 60 minutes.
This unit will accept 200mm and 300mm diameter sieves.
Wet sieving kits in the appropriate sizes may be used with this shaker.

SL 0152
Sieve Shaker

Electromagnetic Sieve Shaker

The Sieve Shaker is powered by an electromagnetic drive which has no rotating parts to wear making it maintenance free and extremely quiet in operation.

The vibratory action produced by the power unit moves the sample over the sieve in a unique way producing faster more efficient sieving, while the rapid vertical movements also help keep the apertures from pegging.

The digital controller is used to set both the process time and amplitude setting while a further control enables the vibration to run continuously or intermittently.

SL 0153
Electromagnetic Sieve Shaker

Testing Sieves

Standards: EN 933-2, ISO 3310-1, ISO 3310-2, ISO 565

All test sieves are manufactured to National and International Specifications and are supplied with a “Certificate of Compliance”.

Each sieve is individually serial numbered, ensuring full traceability. Particle Size Analysis is probably performed in all laboratories engaged in testing materials for civil engineering applications.

The range of sieves offered includes ISO, EN, BS and ASTM sieves. Woven wire test sieves are manufactured from stainless steel mesh while the Perforated plate test sieves are manufactured from tinned steel plate.

All test sieves unless otherwise indicated are supplied with full-depth frames.
All our sieves are manufactured in the United Kingdom.

Testing Sieves

Standards: EN 933-2, ISO 3310-1, ISO 3310-2, ISO 565

Sieve Size 200 mm dia	Sieve Size 300 mm dia	Woven wire stainless steel mesh
Product code	Product code	Mesh Size and description, BS 410/ISO 3310
SL 0155	SL 0192	Lid
SL 0156	SL 0193	Receiver
SL 0157	SL 0194	20 micron
SL 0158	SL 0195	25 micron
SL 0159	SL 0196	32 micron
SL 0160	SL 0197	36 micron
SL 0161	SL 0198	38 micron
SL 0162	SL 0199	40 micron
SL 0163	SL 0200	45 micron
SL 0164	SL 0201	50 micron
SL 0165	SL 0202	53 micron
SL 0166	SL 0203	56 micron
SL 0167	SL 0204	63 micron
SL 0168	SL 0205	71 micron
SL 0169	SL 0206	75 micron
SL 0170	SL 0207	80 micron
SL 0171	SL 0208	90 micron
SL 0172	SL 0209	100 micron
SL 0173	SL 0210	106 micron
SL 0174	SL 0211	112 micron
SL 0175	SL 0212	125 micron
SL 0176	SL 0213	140 micron
SL 0177	SL 0214	150 micron
SL 0178	SL 0215	160 micron
SL 0179	SL 0216	180 micron
SL 0180	SL 0217	200 micron
SL 0181	SL 0218	212 micron
SL 0182	SL 0219	224 micron
SL 0183	SL 0220	250 micron
SL 0184	SL 0221	280 micron
SL 0185	SL 0222	300 micron
SL 0186	SL 0223	315 micron
SL 0187	SL 0224	355 micron
SL 0188	SL 0225	400 micron
SL 0189	SL 0226	425 micron
SL 0190	SL 0227	450 micron
SL 0191	SL 0228	500 micron

Testing Sieves

Standards: EN 933-2, ISO 3310-1, ISO 3310-2, ISO 565

Sieve Size 200 mm dia	Sieve Size 300 mm dia	Woven wire stainless steel mesh
Product code	Product code	Mesh Size and description, BS 410/ISO 3310
SL 0229	SL 0266	560 micron
SL 0230	SL 0267	560 micron
SL 0231	SL 0268	600 micron
SL 0232	SL 0269	630 micron
SL 0233	SL 0270	710 micron
SL 0234	SL 0271	800 micron
SL 0235	SL 0272	850 micron
SL 0236	SL 0273	900 micron
SL 0237	SL 0274	1 mm
SL 0238	SL 0275	1.12 mm
SL 0239	SL 0276	1.18 mm
SL 0240	SL 0277	1.25 mm
SL 0241	SL 0278	1.40 mm
SL 0242	SL 0279	1.60 mm
SL 0243	SL 0280	1.70 mm
SL 0244	SL 0281	1.80 mm
SL 0245	SL 0282	2.00 mm
SL 0246	SL 0283	2.24 mm
SL 0247	SL 0284	2.36 mm
SL 0248	SL 0285	2.50 mm
SL 0249	SL 0286	2.80 mm
SL 0250	SL 0287	3.15 mm
SL 0251	SL 0288	3.35 mm
SL 0252	SL 0289	3.55 mm
SL 0253	SL 0290	4.00 mm
SL 0254	SL 0291	4.50 mm
SL 0255	SL 0292	4.75 mm
SL 0256	SL 0293	5.00 mm
SL 0257	SL 0294	5.60 mm
SL 0258	SL 0295	6.30 mm
SL 0259	SL 0296	6.70 mm
SL 0260	SL 0297	7.10 mm
SL 0261	SL 0298	8.00 mm
SL 0262	SL 0299	9.00 mm
SL 0263	SL 0300	9.50 mm
SL 0264	SL 0301	10.00 mm
SL 0265	SL 0302	11.2 mm

Testing Sieves

Standards: EN 933-2, ISO 3310-1, ISO 3310-2, ISO 565

Sieve Size 200 mm dia	Sieve Size 300 mm dia	Woven wire stainless steel mesh
Product code	Product code	Mesh Size and description, BS 410/ISO 3310
SL 0303	SL 0331	12.5 mm
SL 0304	SL 0332	13.2 mm
SL 0305	SL 0333	14.00 mm
SL 0306	SL 0334	16.00 mm
SL 0307	SL 0335	18.00 mm
SL 0308	SL 0336	19.00 mm
SL 0309	SL 0337	20.00 mm
SL 0310	SL 0338	22.4 mm
SL 0311	SL 0339	25.00 mm
SL 0312	SL 0340	26.5 mm
SL 0313	SL 0341	28.00 mm
SL 0314	SL 0342	31.5 mm
SL 0315	SL 0343	35.5 mm
SL 0316	SL 0344	37.5 mm
SL 0317	SL 0345	40.00 mm
SL 0318	SL 0346	45.00 mm
SL 0319	SL 0347	50.00 mm
SL 0320	SL 0348	53.00 mm
SL 0321	SL 0349	56.00 mm
SL 0322	SL 0350	63.00 mm
SL 0323	SL 0351	71.00 mm
SL 0324	SL 0352	75.00 mm
SL 0325	SL 0353	80.00 mm
SL 0326	SL 0354	90.00 mm
SL 0327	SL 0355	100.00 mm
SL 0328	SL 0356	106.00 mm
SL 0329	SL 0357	112.00 mm
SL 0330	SL 0358	125.00 mm

Testing Sieves

Standards: EN 933-2, ISO 3310-1, ISO 3310-2, ISO 565

Sieve Size 200 mm dia	Sieve Size 300 mm dia	Perforated plate mild steel plate sieve
Product code	Product code	Mesh Size and description, BS 410/ISO 3310
SL 0359	SL 0396	4.00 mm
SL 0360	SL 0397	4.50 mm
SL 0361	SL 0398	4.75 mm
SL 0362	SL 0399	5.00 mm
SL 0363	SL 0400	5.60 mm
SL 0364	SL 0401	6.30 mm
SL 0365	SL 0402	6.70 mm
SL 0366	SL 0403	7.10 mm
SL 0367	SL 0404	8.00 mm
SL 0368	SL 0405	9.00 mm
SL 0369	SL 0406	9.50 mm
SL 0370	SL 0407	10.00 mm
SL 0371	SL 0408	11.2 mm
SL 0372	SL 0409	12.5 mm
SL 0373	SL 0410	13.20 mm
SL 0374	SL 0411	14.00 mm
SL 0375	SL 0412	16.00 mm
SL 0376	SL 0413	18.00 mm
SL 0377	SL 0414	19.00 mm
SL 0378	SL 0415	20.00 mm
SL 0379	SL 0416	22.4 mm
SL 0380	SL 0417	25.00 mm
SL 0381	SL 0418	26.50 mm
SL 0382	SL 0419	28.00 mm
SL 0383	SL 0420	31.5 mm
SL 0384	SL 0421	35.50 mm
SL 0385	SL 0422	37.50 mm
SL 0386	SL 0423	40.00 mm
SL 0387	SL 0424	45.00 mm
SL 0388	SL 0425	50.00 mm
SL 0389	SL 0426	53.00 mm
SL 0390	SL 0427	56.00 mm
SL 0391	SL 0428	71.00 mm
SL 0392	SL 0429	75.00 mm
SL 0393	SL 0430	80.00 mm
SL 0394	SL 0431	90.00 mm
SL 0395	SL 0432	100.00 mm

Testing Sieves

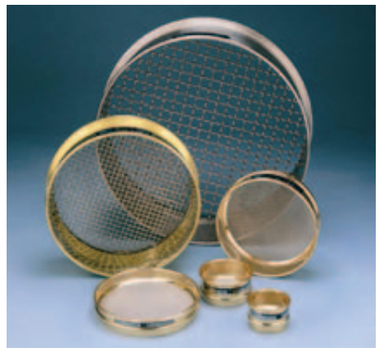
Standards: EN 933-2, ISO 3310-1, ISO 3310-2, ISO 565

Sieve Size 200 mm dia	Sieve Size 300 mm dia	Perforated plate mild steel plate sieve
Product code	Product code	Mesh Size and description, BS 410/ISO 3310
SL 0433	SL 0436	106 mm
SL 0434	SL 0437	112 mm
SL 0435	SL 0438	125 mm

Testing Sieves

Standards: ASTM E11

ASTM E11 sieves are similar in construction to those used in the British Standard range.
Two frame sizes are available as standard, 8 inch or 12 inch diameter.



Sieve Size 8 inch dia	Sieve Size 12 inch dia	Woven wire stainless steel mesh
Product code	Product code	Mesh Size and description, ASTM
SL 0439	SL 0452	20 micron - no. 635
SL 0440	SL 0453	25 micron - no. 500
SL 0441	SL 0454	32 micron - no. 450
SL 0442	SL 0455	38 micron - no. 400
SL 0443	SL 0456	45 micron - no. 325
SL 0444	SL 0457	53 micron - no. 270
SL 0445	SL 0458	63 micron - no. 230
SL 0446	SL 0459	75 micron - no. 200
SL 0447	SL 0460	90 micron - no. 170
SL 0448	SL 0461	106 micron- no. 140
SL 0449	SL 0462	125 micron - no. 120
SL 0450	SL 0463	150 micron - no. 100
SL 0451	SL 0464	180 micron - no. 80

Testing Sieves

Standards: Standards: ASTM E11

Sieve Size 8 inch dia	Sieve Size 12 inch dia	Woven wire stainless steel mesh
Product code	Product code	Mesh Size and description, ASTM
SL 0465	SL 0502	212 micron - no. 70
SL 0466	SL 0503	250 micron - no. 60
SL 0467	SL 0504	300 micron - no. 50
SL 0468	SL 0505	355 micron - no. 45
SL 0469	SL 0506	425 micron - no. 40
SL 0470	SL 0507	500 micron - no. 35
SL 0471	SL 0508	600 micron - no. 30
SL 0472	SL 0509	710 micron - no. 25
SL 0473	SL 0510	850 micron - no. 20
SL 0474	SL 0511	1.00mm- no. 18
SL 0475	SL 0512	1.18mm- no. 16
SL 0476	SL 0513	1.40mm- no. 14
SL 0477	SL 0514	1.70mm- no. 12
SL 0478	SL 0515	2.00mm- no. 10
SL 0479	SL 0516	2.36mm - no. 8
SL 0480	SL 0517	2.80mm - no. 7
SL 0481	SL 0518	3.35mm - no. 6
SL 0482	SL 0519	4.00mm - no. 5
SL 0483	SL 0520	4.75mm - no. 4
SL 0484	SL 0521	5.60mm - no. 3 ½
SL 0485	SL 0522	6.30mm - 1/4 inch
SL 0486	SL 0523	6.70mm 0.265 inch
SL 0487	SL 0524	8.00mm - 5/16 inch
SL 0488	SL 0525	9.50mm - 3/8 inch
SL 0489	SL 0526	11.2mm - 7/16 inch
SL 0490	SL 0527	12.5mm - 1/2 inch
SL 0491	SL 0528	13.2mm 0.530 inch
SL 0492	SL 0529	16.0mm - 5/8 inch
SL 0493	SL 0530	19.0mm - 3/4 inch
SL 0494	SL 0531	22.4mm - 7/8 inch
SL 0495	SL 0532	25.0mm - 1 inch
SL 0496	SL 0533	26.5mm - 1.06 inch
SL 0497	SL 0534	31.5mm - 1 1/4 inch
SL 0498	SL 0535	37.5mm 1 1/2 inch
SL 0499	SL 0536	45.0mm 1 3/4 inch
SL 0500	SL 0537	50.0mm - 2 inch
SL 0501	SL 0538	90.0mm 3 1/2 inch

Testing Sieves

Standards: ASTM E11

Sieve Size 8 inch dia	Sieve Size 12 inch dia	Woven wire stainless steel mesh
Product code	Product code	Mesh Size and description, ASTM
SL 0539	SL 0544	100mm - 4 inch
SL 0540	SL 0545	106mm - 4.24 inch
SL 0541	SL 0546	125mm - 5 inch
SL 0542	SL 0547	Lid
SL 0543	SL 0548	Receiver

SL 0549
75 µm Washing Sieve 8 in diameter x 8 in deep
SL 0550
75 µm Washing Sieve 200 mm diameter, 200 mm deep

Accessories:
SL 0551
Sieve Brush, double-ended, brass and nylon bristle
SL 0552
Sieve Brush, nylon, double-ended

Ultrasonic cleaning bath

Standards: ASTM E11

The Ultrasonic cleaning baths use cavitation to remove dirt from objects that are immersed in the cleaning liquid.

Cavitation is the sequential formation and collapse of vapour bubbles and voids in a liquid subjected to acoustic energy at high frequency and intensity.

Cavitation occurs wherever the liquid penetrates, ensuring that the smaller and larger aperture sieves are cleaned equally well. Ultrasonic baths are also useful for cleaning fragile items such as glassware.

The 25 litre cleaning bath has an internal diameter of 410mm and a height of 200mm, accommodating sieves of up to 400mm diameter.

Cleaning baths are manufactured from stainless steel, supplied complete with a 0 - 15 minute timer, lid and incorporate an ultrasonic generator which is suitable for continuous operation..

SL 0553
Ultrasonic Cleaning Baths 25 lt capacity

SL 0554
cleaning Liquid, 5 lt

Speedy Moisture Meter

Standards: BS 812, ASTM D4944, AASHTO T217

The Speedy Moisture is a portable system comprising a vessel with an integral pressure gauge a weighing scale and a carry case.

A small sample of the material is prepared, weighed and placed into the vessel. The reagent is then added and the vessel is sealed and shaken to mix the reagent with the sample.
Free moisture within the sample reacts with the reagent to produce a gas and pressure rise within the vessel that is proportional to the amount of moisture.

The moisture content value is then read directly from the calibrated pressure gauge.

Speedy vessel manufactured from cast aluminium and fitted with a calibrated pressure gauge with a moisture measurement range of 0 - 20%. with 0.2% Gauge divisions.

SL 0555
Small Speedy, 6 gr sample
SL 0556
Small Speedy, 20 gr sample
SL 0557
Calcium Carbide

Universal Carbide Meter

Standards: BS 812, ASTM D4944, AASHTO T217

The moisture content can be determined using the Moisture tester based on the calcium carbide method.
The soil sample is introduced in the bottle with the reagent. The water reacts with calcium carbide and develops a gas pressure, which is indicated on the manometer and easily converted in percentage of moisture.

SL 0558
Small Carbide Meter, 10 gr sample
SL 0559
Medium Carbide Meter, 20 gr sample
SL 0560
Large Carbide Meter, 50 gr sample
SL 0561
Calcium Carbide reagent ampoules pack of 100 pieces

Liquid Limit Devices: Casagrande Method

Standards: BS 1377:2, ENV 1997-2, ASTM D4318, AASHTO T89

Used to determine the moisture content at which clay soils pass from a plastic to a liquid state.

It helps in the classification of soil when comparing the potential properties of soil material against empirical data.

Consists of a removable brass cup, adjustable crank, mechanical blow counter, and base.

SL 0562
Manual Liquid Limit complete with counter, metal grooving tool and test gauge, BS Standard
SL 0563
Motorised Liquid Limit complete with counter, metal grooving tool and test gauge, BS Standard
SL 0564
Manual Liquid Limit complete with counter, less ASTM Standard

SL 0565
ASTM Metal Grooving Tool
SL 0566
AASHTO Casagrande Grooving Tool

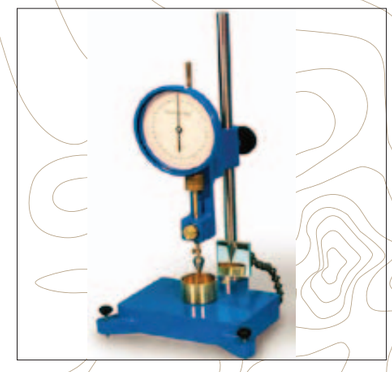
Cone Penetrometer Test

Standards: BS 1377, 1924-2, EN DD ENV 1997-2

The Cone Penetrometer is used to carry on liquid limit tests on soil samples.
It is a static test depending on the soil shear strength.

The test is based on the relationship between moisture content and the penetration of a cone into the soil sample under pre-set conditions.

SL 0567
Manual operated Cone Penetrometer Supplied complete penetration needle and sample cups
SL 0568
Semi-Automatic Cone Penetrometer Supplied complete penetration needle and sample cups
SL 0569
Fully Automatic Cone Penetrometer



Supplied complete penetration needle and sample cups

Determination of Plastic Limit

Standards: ASTM D4318, AASHTO T90, BS 1377:2

The plastic limit (WP) is defined as the lowest moisture content of a soil that will permit a sample to be rolled into threads of 3 mm diameter without the threads breaking.

The Plastic Limit Set comprises of a glass plate, steel rod, mixing dish, spatula and 4 moisture content tins.

SL 0570
Plastic Limit complete test set

SL 0571
Glass Plate

Determination of Shrinkage Limit

Standards: ASTM D427, AASHTO T92, BS 1377

When the water content of a fine-grained soil is reduced below the plastic limit, shrinkage of the soil mass continues until the shrinkage limit is reached.

This method of test covers the determination of the shrinkage limit, shrinkage ratio, volumetric shrinkage and linear shrinkage.

The set comprises prong plate, shrinkage dish, spatula, glass measuring cylinder and two moisture content tins.

SL 0572
Shrinkage Limit complete test set

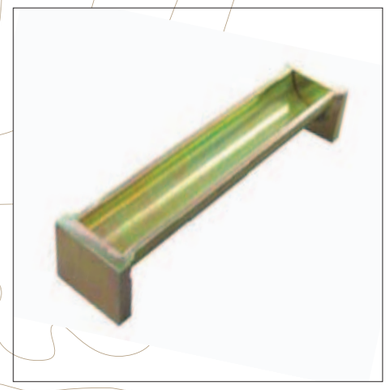
Linear Shrinkage Mould

Standards: BS 1377:2

The Linear Shrinkage test covers the determination of the shrinkage of soils and indicates the plastic properties of soils with low clay content.

Linear Shrinkage Mould 140 mm long, 12.5 mm radius.
weight: 300 g.

SL 0573
Linear Shrinkage Mould
SL 0574
Vernier Caliper



Voluvessel, 1/20 cu. ft. (1600ml) capacity

Standards: ASTM D2167; AASHTO T205

The Voluvessel determine the in-place density of compacted or firmly-bonded soils using a rubber balloon apparatus viewed through a graduated, direct-reading clear plastic cylinder protected by metal casing.

The model features a plastic cylinder, which screws into the density plate with the pump assembly mounted to the base.

The Voluvessel comes with a pressure-vacuum pump assembly, pressure gauge, quick coupler valve, double graduated cylinder, 10 balloons and a density plate.

SL 0575
Voluvessel complete test set.
SL 0576
Spare Balloons, for use with Voluvessel Apparatus. Pack of 10

Guelph Permeameter Apparatus

Standards: ASTM D5126

The Guelph Permeameter is use for measuring in-situ hydraulic conductivity.
Accurate evaluation of soil hydraulic conductivity, soil captivity, and matrix flux potential can be made in all types of soils.

SL 0577
Guelph Permeameter Complete Set

Comprises:

- Permeameter field tripod
- Well auger
- Well preparation
- Cleanup tools
- Collapsible water container
- Vacuum test hand pump
- Durable carrying case

Falling Head Permeameter Apparatus

The Falling Head Permeameter apparatus is used to determine the permeability of clay-like or silty soils.
The specimen is confined within the permeameter which is connected to the manometer tube filled with water.
The sample must be completely satured with water before the test, and the operator will check the rate of fall of the water in the tube passing through the test specimen.

The set consists of Manometer tubes and stand with three tubes each dia. 3, 4 and 6 mm for the different degrees of permeability, soaking reservoir with cock, tubing and connectors.

Permeameter dia. 4” complete with perforated plates and stainless steel gauze.

SL 0578
Permeameter dia. 6” complete with perforated plates and stainless steel gauze
SL 0579
De-airing tank 20 litre capacity made from acrylic plexiglass
SL 0580
Water trap to collect the water condensation
SL 0581
Portable vacuum pump, 230 V 1ph 50 Hz
SL 0582
Rubber tubing for vacuum, 3 m long

Constant Head Permeameter Apparatus

Standards: BS 1377:5 ; ASTM D2434 ; AASHTO T215

The Constant Head Pemeameter apparatus is used for testing the permeability of granular soils (sand and gravels).
The specimen is formed in a permeability cell and water is passed through it from a constant level tank.

Take off point located along the sides of the permeability cell are connected to three manometer tubes mounted on a panel complete with a metre scale.

Water passing through the specimen is collected and measured, either for a specific quality or over a period of time.
The reduction of head is noted from the variation of water level in the manometer tubes.

SL 0583
Manometer tubes and stand, comprising three tubes of constant bore, graduated scale, tubing and connectors.

SL 0584
Constant head permeability cell 75 mm dia., with three pressure take-off points.

SL 0585
Constant head permeability cell 114 mm dia., with six pressure take-off points and an additional six blanked-off pressure points.

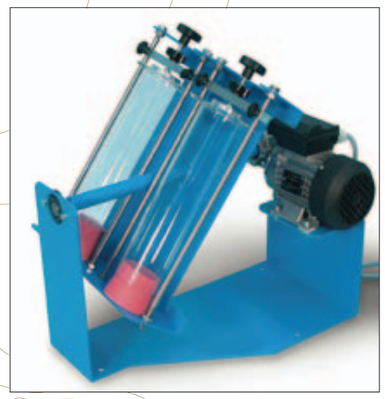
SL 0586
Constant level tank,

Gas Jar Method: End-Over-End Shaker

Standards: BS 1377:2, EN 1997-2

The The End over End Shaker is used to determine the specific gravity of soils containing up to 10% particles retained on a 37.5 mm sieve, it rotates two gas jars at approx 50 rpm to satisfy BS Standard. The shaker is equipped with an original friction device.
220 V, 50-60 Hz, 1 ph

SL 0587
End-over-End Shaker
SL 0588
Gas Jar 1 litre capacity complete with rubber bung and glass cover



Mechanical End-over-End Shaker

Standards: BS 1377, EN 1997-2

The Particle density or specific gravity is a measure of the actual particles which make up the soil mass and is defined as the ratio of the mass of the particles to the mass of the water they displace.

This method is suitable for soils containing up to 10% of particles retained on a 37.5 mm BS sieve.

SL 0589
Mechanical End-over-End Shaker
SL 0590
Gas Jar 1 litre capacity complete with rubber bung and glass cover

Sedimentation Hydrometer Apparatus

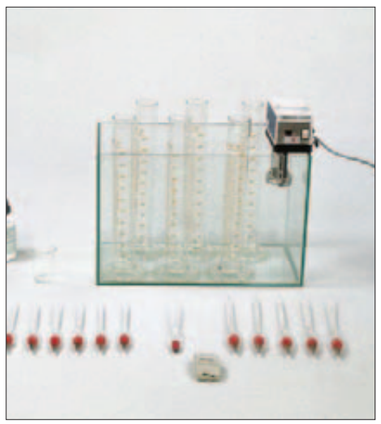
Standards: BS 1377, ASTM D422, AASHTO T88

The Sedimentation Hydrometer apparatus is used to determine particle size distribution in soil from the coarse sand size down to the smallest fractions.

In this method the sample is cleaned from organic matter after which it is dried and weighed. Next it is suspended in water and sieved.
The solution that passes through the sieve is transferred to a measuring cylinder with water.

Hydrometer readings are taken after regular intervals. Sedimentation time and hydrometer readings are used to determine the grain sizes according to the Stoke's Law.

SL 0591
Constant Temperature Bath
SL 0592
Sodium Hexametaphosphate 500 g
SL 0593
Hydrometer Sedimentation Cylinder 1000 ml



Mechanical Analysis Stirrer

Standards: BS ASTM D422;AASHTO T88

The compact, bench-top mechanical stirrer is used for dispersing soil samples in water for hydrometer analysis. The stirrer is supplied complete with Mixing Paddle and Dispersion Cup.

SL 0594
Mechanical Analysis Stirrer

SL 0595
Soil Hydrometer BS/EN, graduated 0.0995 to 1.030 g/ml.

SL 0596
Soil Hydrometer ASTM/AASHTO (152H) graduated –5 to +60 g/litre.

SL 0597
Soil Hydrometer ASTM D422 (151H) graduated 0.0995 to 1.038 g/ml.+60 g/litre.

Pyknometer Methods

Standards: BS 1377, 812-2, EN 1097-7, 1997-2, ASTM D 854, AASHTO T100

The Pyknometer Method is used to determine the specific gravity of clays, sand and gravel of size smaller than 10mm. Specific gravity is the ratio of weight to volume of a specific material in air and in water at a constant temperature.

SL 0598
Density Bottle 25 ml, Supplied complete with capillary vent stopper.

SL 0599
Density Bottle 50 ml, Supplied complete with capillary vent stopper.
SL 0600
Density Bottle 100 ml, Supplied complete with capillary vent stopper.
SL 0601
Pyknometer 1000 ml, Glass jar complete with non-corrodible cone and rubber seal.
SL 0602
Spare Rubber seal

Magnetic Stirrer

Standards: EN 933–8, ASTM D2419, AASHTO T176

The magnetic stirrer hotplates are specifically designed for laboratory usage. Available in a choice of either robust aluminium or chemically resistant ceramic top, each is equipped with a range of advanced safety and communication features. To alert the user, a "Hot" warning light will flash whenever the plate temperature is above 50°C. Powerful magnets and motor give stirring speed up to 1500rpm and volumes up to 15 litres. The units automatically detect when the contact thermometer is plugged in and is visible by an illuminated LED on the hotplate, providing reassurance that the temperature of the sample is precisely controlled at all times.

SL 0603
Magnetic Stirrer complete test set

Sand Equivalent Test

Standards: EN 933–8, ASTM D2419, AASHTO T176

The Sand Equivalent Test indicates the relative portion of undesirable clay-like or plastic fines and dusts that occur in granular soils and fine aggregates passing the No. 4 sieve.

The sample to be tested is placed in a special solution of calcium chloride, formaldehyde and glycerine. After shaking the cylinder, it is allowed to stand for a 20-minute sedimentation period.
Readings are then taken on the cylinder scale for the level of the top of the clay suspension and for the sand level.
The “Sand Equivalent” is the sand reading divided by the clay reading x 100. When the water content of a fine-grained soil is reduced below the plastic limit, shrinkage of the soil mass continues until the shrinkage limit is reached.

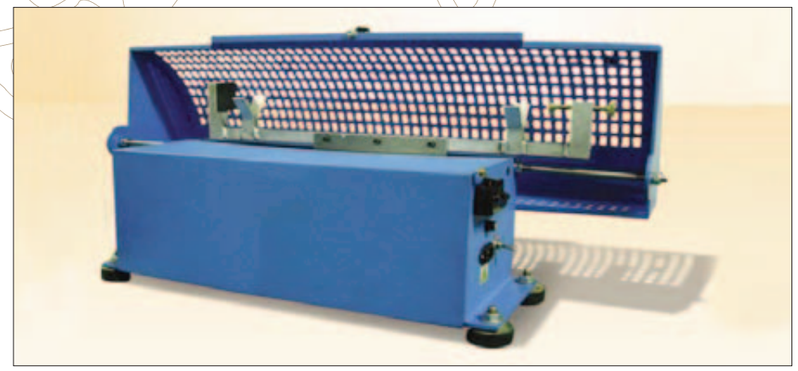
SL 0604
Sand Equivalent Test Set

Sand Equivalent Shaker

Standards: EN 933–8, ASTM D2419, AASHTO T176

The Sand Equivalent Shaker is recommended for laboratories performing sand equivalent tests on a regular basis.
The shaker is used for uniform shaking of Sand Equivalent Measuring Cylinders.
Provides shaking action at the specified rate and stroke. Supplied complete with built in timer.

SL 0605
Sand Equivalent Shaker



Sand Cone Density

Standards: ASTM D1556, AASHTO T191

The Sand Cone Density is used for on site determination of the degree of compaction of sand.
Complete set includes double cone, plastic sand jar 5lt capacity and metal tray.

SL 0606
Sand Cone Density complete set
SL 0607
Standard Sand, 600/300 µm, 50 Kg.

Sand Replacement

Standards: BS 1377:9, 1924:2

The Sand Replacement is used to determine the dry density of in-situ compact, fine, medium grained soils and for layers not exceeding 50 cm thickness.
A circular hole is dug in the ground, all the soil from within it is collected, weighed and dried.
The hole is then back-filled with standard uniform sand or fine gravel, poured from a calibrated container for calculating the volume of hole.

Complete set consists of pouring cylinder, calibration container and a tray. The sand pouring cylinder is made of cast aluminum and precisely machined.
The calibration container and tray are made of plated sheet steel.

SL 0608
Sand Replacement Set 100 mm
SL 0609
Sand Replacement Set 150 mm

SL 0610
Sand Replacement Set 200 mm

Riffle Boxes

Standards: BS 1377, 1924, 812, EN 932-1, 933-3, ASTM C72

Riffle Boxes are used for dividing soil aggregates into representative sample increment for testing.
Heavy Duty Electrostatic painted and manufactured from heavy gauge sheet metal the slot widths and number of slots as required in the standards.
Riffle boxes are supplied complete with 3 containers easy to handle.

SL 0611
Slot Width 7 mm 2,2 kg
SL 0612
Slot Width 13 mm 6,2 kg

SL 0613
Slot Width 15 mm 8 kg
SL 0614
Slot Width 19 mm 9,5 kg
SL 0615
Slot Width 25 mm 12,5 kg
SL 0616
Slot Width 30 mm 19,9 kg
SL 0617
Slot Width 38 mm 21 kg
SL 0618
Slot Width 45 mm 24,7 kg
SL 0619
Slot Width 50 mm 26,8 kg

SL 0620
Slot Width 64 mm 32,1 kg
SL 0621
Slot Width 75 mm 35,3 kg

Gilson Sample Splitter

Standards: ASTM D427, AASHTO T92, BS 1377

The Gilson Sample Splitter is rugged, large-capacity floor model for field or lab use.
Features adjustable chutes and gate release hopper.
Particle sizes from 60 microns to 6 inch, Includes 2 pans.

SL 0622
Gilson Sample Splitter

Plate Bearing Test Equipment

Standards: ASTM D 1194, D1195, D1196, BS 1377:9

The Plate Bearing Test is used to determine the bearing capacity of a soil under field loading conditions for a specific loading plate and depth of embedment. It is also used for load tests of soil and flexible pavement components.
The Basic test set unit is supplied complete with 2.4 meter long datum bar. 3 dial gauges (50 mm) hydraulic cylinder 500 KN with hand pump, pressure gauge, connections and 300 mm diameter loading plate.

SL 0623
Plate Bearing Complete Set
SL 0624
300mm dia loading plate
SL 0625
450mm dia loading plate
SL 0626
600 mm dia loading plate
SL 0627
760 mm dia loading plate

Electrical Density Gauge

Standards: ASTM D6938, D2950, C1040 and AASHTO T310

The electrical density gauge measures pavement density indirectly by measuring its dielectric constant. It passes a small current through the pavement, which creates an electrical sensing field. Density is measured by the response of this electrical sensing field to changes in the pavement's complex impedance (consisting of the pavement's composite resistivity and dielectric constant).

The advantage of using the electrical density gauge is that the readings can be obtained in seconds.
It contains no radioactive source and therefore not subject to radiological controls. More effective cost control, no licensing or special training needed, easier to use, light in weight.

SL 0628
Electrical Density Gauge

Nuclear Density Gauge

Standards: ASTM D6938, D2950, C1040 and AASHTO T310

The Nuclear Density Gauge that is better in performance than any other gauge on the market today with the lowest maintenance and operating costs.

Operation is straightforward and uncomplicated. Menu options are easy to read and navigate.
A backlit LCD screen and special scroll functions allow operators to easily read.

The gauge uses an advanced micro-processor-based technology to provide highly-accurate measurements of density and moisture that are automatically computed for direct readouts of wet density, dry density, moisture content, percent of moisture, percent of compaction (Proctor or Marshall), void ratio and air voids.

SL 0629
Nuclear Density Gauge

Consolidation Apparatus

Standards: BS 1377:5 / ASTM D2435, D3877, D4546, AASHTO T216

The One-dimensional Consolidation test is used to determine the consolidation characteristics of soils of low permeability.
The consolidation is rigidly constructed to ensure minimum frame distortion.
The frame is designed to load the specimen through a yoke assembly and one of three alternative beam ratios as 9:1 – 10:1 and 11:1.
The beam is fitted with a counter balance weight and beam support check. The cell platform will accept the complete range of consolidation cells and is fitted with a central spigot to ensure accurate centering of the cell under the loading yoke.

The fixed ring consolidation cells are manufactured from corrosion-resistant materials and conform to the requirements of the relevant standards.

An integral water reservoir is incorporated in the cell which allows the specimen to be inundated when required.

SL 0630
Consolidation Frame
SL 0631
Floor-mounting stand securing up to three Consolidation Frames.
SL 0632
Set of weights (4x10 kg, 1x5 kg, 2x2 kg, 1x1kg)

Consolidation Cells

SL 0633
Consolidation cell, 50 mm complete
SL 0634
Consolidation cell, 75 mm complete
SL 0635
Consolidation cell, 2.5 inch complete
SL 0636
Floating Ring Consolidation Cell 63.5 mm (2.5 in) diameter sample.

Measurement of Movement

SL 0637
Dial Gauge BS, 10 x 0,001 mm div
SL 0638
Dial Gauge ASTM, 0.5 x 0.0001 inch div
SL 0639
Displacement Transducer, BS
SL 0640
Displacement Transducer, ASTM
SL 0641
Data Logger

Spare

SL 0642
Cutting ring
SL 0643
Calibration disc
SL 0644
Upper porous disc
SL 0645
Lower porous disc

Direct Residual Shear Apparatus

Standards: BS 1377, EN 1997-2, ASTM D3080, AASHTO T236

The Digital Residual Direct Shear Apparatus is used for determination of the direct shear strength of soils specimen.
The process is known as shear failure and occurs when shear stresses set up in the soil mass exceed the maximum shear resistance which the soil can offer, i.e. its shear strength.

Comprises:

Direct Shear box, floor mounted with carriage assembly and load hanger with 10:1 lever loading device. Microprocessor controlled digital motor with digital keyboard display and return datum facility. Variable speed over the range of 0.00001 to 9.99999mm/minute. Fast forwar reverse 10 mm per minute.

SL 0646
Digital Direct Residual Shear Apparatus, Supplied without shearbox, load ring, vertical and horizontal dial gauges.
SL 0647
Slotted Weights, 50 kg Set of Weights

Measurement of Load
SL 0648
Compression Load ring, 2 KN
SL 0649
Compression Load ring, 5 KN
SL 0650
S-type Load Cell, 5 KN

Measurement of Movement
SL 0651
Vertical Dial Gauge, 10 x 0,01mm
SL 0652
Horizontal Dial Gauge, 10 x 0,01mm
SL 0653
Displacement Transducer

Shear Box Assemblies
SL 0654
Shear Box Assembly BS 1377, 60x60x25mm, 2 Kg
SL 0655
Shear Box Assembly BS 1377, 100x100x25mm, 5.2 Kg
SL 0656
Shear Box Assembly ASTM D3080, 2.5 x 1inch, 2.8 Kg

Accessories and Spares
SL 0657
Specimen Cutter for 60mm
SL 0658
Specimen Extrusion Tool for 60mm
SL 0659
Porous Disc for 60mm

SL 0660
Specimen Cutter for 100mm
SL 0661
Specimen Extrusion Tool for 100mm
SL 0662
Porous Disc for 100mm

SL 0663
Specimen Cutter for 2.5inch
SL 0664
Specimen Extrusion Tool for 2.5inch
SL 0665
Porous Disc for 2.5inch

Automatic Soil Compactor

Standards: BS 1377-4, 1990, EN 1997-2, 1924, 13286-2, 47, ASTM D558, 560, 698, 1557, AASHTO T99, T134, 135, 136, 180, 193

The Automatic Soil Compactors is designed to provide a uniform compaction of Standard, Modified and CBR specimens assuring conformity with the reference standard.

The Compactor is equipped with programmable digital counter which allows machine to stop at the preset numbers of blows. The height and weight of the rammer is adjustable to suit test requirements.
The drop weight is adjustable to 300 mm drop height and is also adjustable to 450 mm drop height. The rammer is circular faced with a 50 mm diameter and is adjustable to 2.5 kg. or 4.5 kg.
An automatic blow pattern ensures effective compaction for each layer of soil and the rammer travels across the mould.

The table rotates the mould in equal steps and the number of blows per layer can be set at the beginning of the test by the digital counter.

Drop Height: 300 mm, 305 mm, 450 mm, 457 mm (adjustable)
Rammer Weight: 2.5 kg, 4.5 kg
Dimensions:
640 x 340 x 1506 mm (w x l x h)
Power: 220 V, 50-60 Hz, 1 ph
Weight (approx.): 135 kg

SL 0666
Automatic Soil Compactor BS/EN
SL 0667
Automatic Soil Compactor ASTM
Spares
SL 0668
Rammer BS/EN, 50 mm dia, adjustable to 2.5 kg or 4.5 kg weight
SL 0669
Rammer ASTM, 2 in dia, adjustable to 5.5 lb (2.5 kg) or 10 lb (4.5 kg)

Dry Density, Moisture Relationship, Standard and Modified Proctor Mould

Standards: BS1377-4,1924-2,1997-2,ASTM D558,559,560,698,1557 AASHTO T99, T134 T135, T136

The Moulds are used for determining the relationship between the moisture content and density of compacted soil. Made of plated steel, includes collar, mould body and base plate.

SL 0670
Standard Compaction Mould BS/EN 1 litre, 5.5 kg.
SL 0671
Compaction Rammer, 50 mm dia, 2.5 kg BS/EN
SL 0672
Compaction Rammer, 50 mm dia, 4.5 kg BS/EN

SL 0673
Proctor Compaction Mould, 1/30 ft3 5.4 kg, ASTM
SL 0674
Proctor Compaction Rammer, 2 in dia, 5.5 lb, 4.1 kg, ASTM
SL 0675
ASTM Compaction Mould, 1/13.33 ft3, 8.2 kg, ASTM
SL 0676
ASTM Compaction Rammer, 2 in dia, 10 lb, 6.3 kg, ASTM
SL 0677
Straightedge, 300 mm

California Bearing Ratio Test Machine

Standards: BS 1377, 1924, EN 13286-47, ASTM D1883, AASHTO T193

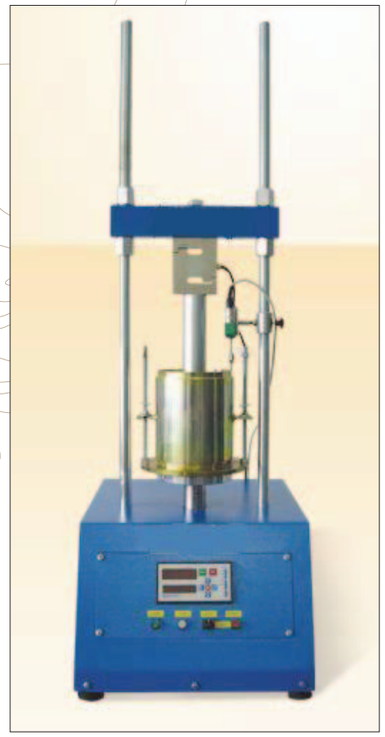
The California Bearing Ratio or CBR test is used for the laboratory evaluation of the bearing value of highway sub-bases and sub-grade.

The CBR is composed by a robust and compact two-column frame with adjustable upper cross beam driven by an electromechanical ram with a maximum capacity of 50 kN and a data acquisition and processing system.
The CBR is designed to load the penetration piston into the soil sample at a constant rate to measure the applied load and piston penetration at pre-determined intervals.

The ram speed can be set between 0.5mm/min to 5mm/min by using Digital Readout Unit. This main feature allows user to perform tests complying to BS / EN or ASTM standards with the same machine.
Rapid adjustment of the platen is also provided.

SL 0678
Digital CBR Testing Equipment
50 kN Load frame complete with Stabilising Bar.
SL 0679
Spare Stabilising Bar

Penetration and Measurement
SL 0680
Penetration Piston.
SL 0681
Penetration Dial Gauge BS,
25 mm x 0.01 mm divisions.
SL 0682
Penetration and Swell Dial Gauge,
ASTM 1 x 0.0005 in divisions.
SL 0683
Bracket and Adaptor for CBR penetration dial gauges.
SL 0684
Displacement Transducer
SL 0685
Load Ring, 28 KN complete
SL 0686
Load Ring, 50 KN complete



Data Acquisition and Control System

Standards: BS 1377, 1924, EN 13286-47, ASTM D1883, AASHTO T193

The LCD graphics Data Acquisition and Controls System (DA/CS) is designed to control the machine and to process the data from linear potentiometric transducers, Load Cells, installed on the CBR machine frame.
The DA/CS compatible design satisfies the ergonomic requirements for various uses.
The digital graphic display allows real time Load vs. penetration graph and value readout. At the end of the test cycle the results can be stored in the large memory or to a PC by using the CBR software.

Dedicated real time CBR software package is available for testing and further data processing, database management and certificate printing.
Specification:
- Calculates corrected CBR value at 2,5mm and 5mm
- Large memory up to 100 tests
- RS232 connection serial port for connecting either PC or printer for data transmission
- Two analogical channels, for Load Cell Linear and potentiometer transducer

SL 0687
Data Acquisition and Controls Sys

Multispeed Test Machine

Standards: BS 1377-7, -8 1924-2,ASTM D2850 D4767, AASHTO T296 T297

The Multispeed 50 kN capacity machine has been designed primarily for performing laboratory CBR and Marshall stability on one load frame.

It is particularly suitable for those laboratories carrying out a mix of these tests, e.g. for road construction. The compact bench mounting design comprises a twin column frame incorporated into the motorised drive system. The Upper beam can be adjusted in height.

A robustly constructed case houses the drive system with careful attention being given to the prevention of ingress of water or grit.

All operating controls are mounted on the front panel of the machine.

The frame provides two fix speed ranges, easily selectable by a gear control switch. An emergency stop is installed as an extra safety feature. Foreseen electric end of stroke switches of the load plate to save the machine from wrong manipulations. Digital Display is also available.

Speeds of operation vary between:

1,27 mm/min. for CBR tests.
50,8 mm/min for Marshall tests.

SL 0688
Multispeed 50 kN capacity Machine
SL 0689
Multispeed 50 kN capacity Machine with digital display

In-situ California Bearing Ratio Apparatus

Standards: BS 1377, 1924, EN 13286-47, ASTM D1883, AASHTO T193

The in-situ California Bearing Ratio is used for the evaluation of the bearing capacity of soil from a vehicle on site immediately and with less delay. Rigid and stable frame, made from corrosion-proof steel.

SL 0690
In-situ California Bearing Ratio
50 KN Conversion Frame BS/EN
SL 0691
50 KN Load Ring complete
SL 0692
Bracket and Adapter
SL 0693
50 kN Capacity Mechanical Jack

SL 0694
Datum Bar Assembly
SL 0695
4.5 kg Annular Surcharge Weight
SL 0696
4.5 kg Slotted Surcharge Weight
SL 0697
Set of Extension Rods
SL 0698
Ball Seating with Connections
SL 0699
CBR Penetration Piston
SL 0700
Penetration Dial Gauge

Expansion Swell Test Equipmen

Standards: BS 1377:2

The Swell Test Equipment is placed on top of the soil sample to enable monitoring of swelling.

The swell test consists of perforated plate with adjustable stem (swell plate) dial gauge tripod and dial gauge.

SL 0701
Swell Plate with adjustable stem
SL 0702
Swell Tripod for mounting Swell dial gauge on the CBR mould collar
SL 0703
Dial Gauge 20mm x 0.01 mm

CBR Mould and Accessories

Standards: BS 1377, 1924, EN 13286-4, EN 1997-2, ASTM D1883, AASHTO T193

The range of moulds and accessories specifically designed to meet the requirements of the relevant stadards.

The moulds and accessories are manufactured from high quality, long-lasting material and with proper maintenance will give years of satisfactory performance.

CBR Mould BS/EN:

SL 0704
CBR Mould Body complete with collar and perforated baseplate BS/EN
SL 0705
CBR Extension Collar, BS/EN
SL 0706
CBR Solid Baseplate, BS/EN

CBR Mould ASTM:

SL 0707
CBR Mould Body complete with collar and perforated baseplate ASTM
SL 0708
CBR Extension Collar, ASTM
SL 0709
CBR Solid Baseplate, ASTM

Accessories For CBR Mould BS/EN:

SL 0710
CBR Perforated Baseplate, BS/EN Plated steel 150mm diameter x 120mm body height
SL 0711
CBR Cutting Collar to fit BS/EN mould body
SL 0712
Pair of C-spanner to fit BS/EN CBR moulds and collars
SL 0713
Baseplate Tool BS/EN
SL 0714
Static Compaction Plug BS/EN
SL 0715
2 kg Annular Surcharge Weight BS/EN
SL 0716
2 kg Split Surcharge Weight, BS/EN
SL 0717
Tamping Rod
SL 0718
Filter Papers, 150 mm diameter. Box of 100

Accessories For CBR Mould ASTM:

SL 0719
CBR Cutting Collar to fit mould body ASTM
SL 0720
CBR Spacing Disc ASTM
SL 0721
Baseplate Tool ASTM
SL 0722
5 lb Annular Surcharge Weight ASTM
SL 0723
5 lb Split Surcharge Weight ASTM
SL 0724
Filter Papers, 150 mm diameter. Box of 100

Triaxial Testing Apparatus

Standards: BS 1377-7,8 1924-2, ASTM D2850 D4767 AASHTO T296 T297

The Triaxial Testing Apparatus test soil samples for the following applications:
· Unconsolidated Undrained (UU)
· Consolidated Undrained (CU)
· Consolidated Drained (CD)
· Unconfined Compression (UC)
The Triaxial Testing Apparatus consists of a 50 KN capacity Load Frame, Platen adaptors, dial gauge or digital transducer assembly, Triaxial Cell, Base and pressure system.
The Triaxial Testing Apparatus provide variable speed from 0.399999" (9.99999 mm) per minute to as low as 0.000001" (0.00001 mm) per minute.
SL 0725
Digital Triaxial Load Frame, 50 KN complete
SL 0726
Platen Adaptor
SL 0727
Unconfined Compression Platens and Dial Gauge Mounting Assembly
SL 0728
Dial Gauge 25 mm travel x 0.01 mm
SL 0729
Dial Gauge 50 mm travel x 0.01 mm
SL 0730
Displacement Transducer, 50 mm

An electronic control system with touch-sensitive keypad for precise setting, control and viewing of all load frame functions.
The Data Acquisition and Controls System (DA/CS) for automated data acquisition and recording of test parameters supplied with complete set of Electronic Measurement Transducers for load, displacement, pressure and volume change.
The Triaxial Software for recording, analysis and report generation, master control panel and de-aired water tank system for precise applications of confining, back and saturation pressures.

Triaxial Cells:
SL 0731
Triaxial Cells, 50 mm
SL 0732
Triaxial Cells, 70 mm
SL 0733
Triaxial Cells, 100 mm
SL 0734
Triaxial Cells Base Adaptors, 38 mm
SL 0735
Triaxial Cells Base Adaptors, 50 mm
SL 0736
Triaxial Cells Base Adaptors, 70 mm
SL 0737
Triaxial Cells Base Adaptors, 100 mm

Accessories:
SL 0738
Grease Gun Supplied complete with one tube of silicone grease lubricant.
SL 0739
Silicone Grease Lubricant Tube
SL 0740
Piston Resistant Clamp

Sample Preparation:

Sample Diameter	38 mm	50 mm	70 mm	100 mm
O-Ring placing tool	**SL 0741**	**SL 0750**	**SL 0759**	**SL 0768**
Suction membrane device	**SL 0742**	**SL 0751**	**SL 0760**	**SL 0769**
Two-way split former	**SL 0743**	**SL 0752**	**SL 0761**	**SL 0770**
Two-part split mould	**SL 0744**	**SL 0753**	**SL 0762**	**SL 0771**
10 ml single-tube drainage burette	**SL 0745**	**SL 0754**	**SL 0763**	**SL 0772**
Valve complete with 6 mm connector	**SL 0746**	**SL 0755**	**SL 0764**	**SL 0773**
Tubing and Connector	**SL 0747**	**SL 0756**	**SL 0765**	**SL 0774**
Rubber membrane (pack of 10)	**SL 0748**	**SL 0757**	**SL 0766**	**SL 0775**
Membrane sealing ring (pack of 10)	**SL 0749**	**SL 0758**	**SL 0767**	**SL 0776**

Deaired Water Apparatus

Standards: BS 1377

The compact self-contained unit will deair water quickly and efficiently down to levels of dissolved oxygen acceptable for the use in soil testing laboratories, triaxial tests, saturation and permeability tests.

it is particularly important that water from which dissolved air has been removed is used in the pore pressure measurement system.

Any dissolved air in the water will lead to errors in the measurement of pore pressure, particularly at low pressures.

The deair water apparatus remove air from the water by a vacuum system which continuously circulates the water in the tank.

The unit is supplied with a clear water container which will hold a maximum of 15 litres of water. Input and output lines are formed using standard 6 mm tube connectors.

SL 0777
Deaired Water Apparatus
SL 0778
Spare Water Tank
SL 0779
Nylon Tubing, 6mm bore dia
1 meter length

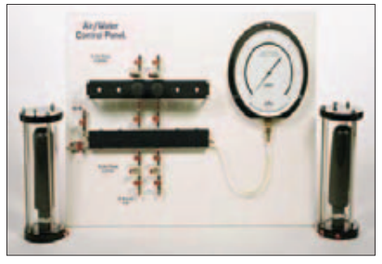
Air/Water Pressure System

To distribute pressure water “up to 1700 kPa.” Simple, practical and extremely accurate to select tests pressure, it can also offer the possibility to further system expansions.

The cell set includes a high pressure air inlet attachment, “a high accurate regulator which enables to set the work pressure and 4 valves for pressure water outlet, water and air drain.” The cell membrane enables the use of deaerated water.
A suitable compressor, which can grant a pressure source, is necessary for using the air/water membrane cell. Air/Water panels are used with an interface to convert air pressure from a standard compressor into water pressure. Bladder Air/Water Cylinder.

SL 0780
Bladder-type Air/Water Pressure Assembly
SL 0781
Spare Bladder Membrain

SL 0782
Two-way Pneumatic Pressure Regulator Panel
SL 0783
Four-way Pneumatic Pressure Regulator Panel
SL 0784
Six-way Pneumatic Pressure Regulator Panel
SL 0785
Air Compressor, 1000 kpa
SL 0786
Filter Unit for Compressor



Oil/Water Pressure System

Standards: BS1377-7, BS1377-8

The Oil/Water Pressure System provides an infinitely variable constant pressure from 0 to 3500 kPa, by using a motorised hydraulic pump, an oil/water interchange vessel, piston/spring and valves with high viscosity oil.

Supplied complete with precision pressure gauge, range 0-3500 KPa. with a control accuracy of better than ± 2.0 kN/m² of the indicated set pressure.

SL 0787
Oil/Water Pressure Apparatus
SL 0788
Universal Pump and Pressure Indicating Panel
SL 0789
Oil, 2 Litres

Microspear, Moisture and Temperature

The instrument measures moisture and temperature of minerals and building materials at depths up to six feet (nearly 2 meters) - simply by insertion.

The digital readings are shown instantly. It has a built-in computer which gives it the flexibility to handle a wide range of materials and water contents.

This instrument will give you quick results and an alternative for sampling and testing using balances or ovens.

Any environment where minerals or building materials are being shipped, stored or processed

Specification:
Measurement Response: 2 seconds
Moisture Range: 0-25%
Moisture Resolution: ±0.1%
Moisture Accuracy: ±0.5% of reading
Temperature Range: -20°C to 60°C
Temperature Resolution: 0.1°C
Temperature Accuracy: <0.5°C
Weight: 1500g
Material Selections:
6 (user configurable)
Power Requirements:
4 x 1.5v AA alkaline cells
(or equivalent)
Shaft Colour Options:
Grey / Orange / Yellow / Blue

SL 0790
Microspear, 1 meter long
SL 0791
Microspear, 2 meter long

Cement production process

Cement is one of the ancient raw materials used in construction. It is uncertain where it was first discovered that a combination of hydrated non-hydraulic lime and a pozzolan produces a hydraulic mixture (e.g., Portland cement) harden because of hydration chemical reactions that occur independently of the mixture's water content; they can harden even underwater or when constantly exposed to wet weather.

Cement is essentially a binder that binds other materials together, Modern cements are manufactured by a chemical process.

Raw materials are crushed, ground and blended before being heated in a rotary kiln until they combine chemically. The clinker from the kiln is then ground with gypsum to form Portland cement.

Different types of cement with different strengths and characteristics can be produced depending on the composition and quality of clinker, fly ash, silica fume, retarders, water proofers, colouring agents and other additives used in the mix.

It is essential to test the physical and chemical parameters of each cement batch produced and to identify the unique characteristics of each composition.
Such parameters include specific surface and gravity of cement particles, consistency, soundness, setting time, heat of hydration, inorganic chemical analysis, loss on ignition, air content and strength.

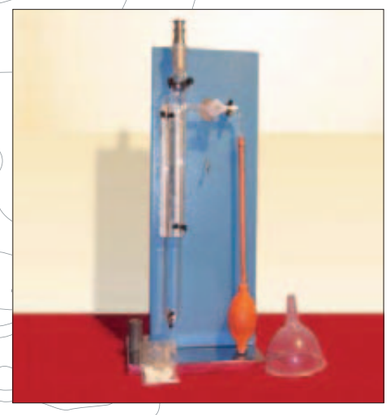
Fineness Blaine Air Apparatus

Standards: BS 1377:2, EN 196-6, 459-2, 13286-44, BS 4359-2, ASTM C204

The Blaine Air Apparatus is used to determine the particle size of Portland cement, limes and similar powders expressed in terms of their specific surface.

Comprises:
It comprises of a stainless steel cell, perforated disc and plunger.
A U-tube glass manometer is fitted to the steel stand.
The set is complete with rubber aspirator and filter paper.

CM 0101
Blaine Air Apparatus
Accessories:
CM 0102
Manometer Tube
CM 0103
Reference Cement
CM 0104
Filter Paper (pack of 100)
CM 0105
Cell with perforated disc
CM 0106
Manometer liquid bottle 250 mm



Specific Gravity Le Chatelier Flask

Standards: EN 196-6, ASTM C188, AASHTO T133

The Chatelier Flask is used to determine the specific gravity of hydraulic cement and lime.

Glass flask 250ml capacity, with graduated neck from 0 to 1 ml and from 18 to 24 ml in 0.1 ml graduation with accuracy of 0.05 ml.

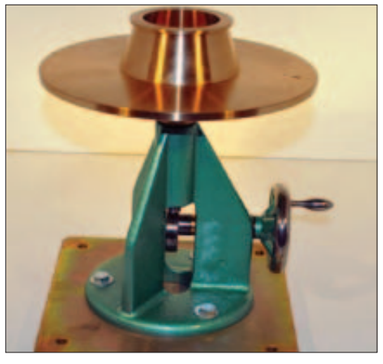
CM 0107
Le Chatelier Flask

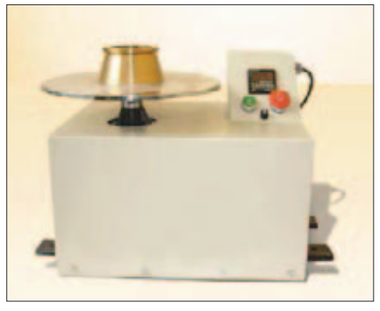
Cement Flow Table

Standards: BS 4551-1, 3892-1, EN 459-2, 1015-3 1015-9, 13395-1

The Flow Table is used for determining consistency of mortar, lime and cement specimens.
The table is 300mm dia., 10mm rop height. The one made of brass has dimensions of 100mm base dia. x 70mm top dia. x 60mm high.

CM 0108
Manual Cement Flow Table, BS, EN
CM 0109
Manual Cement Flow Table, ASTM
CM 0110
Automatic Cement Flow Table,BS/EN





CM 0111
Automatic Cement Flow Table, ASTM
CM 0112
Flow Mould
CM 0113
Tamping Rod

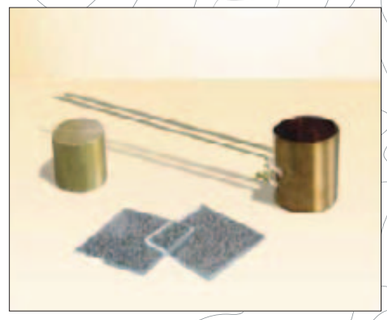
Le Chatelier Mould

Standards: BS 6463; EN 196-3, 459-2, EN ISO 9597

Le Chatelier method determines the soundness of cements and limes by using the expansion test with Le chatelier moulds according to the relevant standard.

Comprises:
The mould consists of a spring tensioned split cylinder 30 mm internal diameter x 30 mm high with two indicator stems which measure 150 mm from the points to the centre line of the cylinder and O-ring. Standard weight 100 g ±10 g and two glass plate are supplied complete with the mould.

CM 0114
Le Chatelier Mould complete



Le Chatelier Water Bath

Standards: EN 196-3, 459-2

The Chatelier Water Bath is use with Le Chatelier moulds for the determination of the soundness of cement paste.

Comprises:
The Water Bath comes complete with removable rack to hold twelve moulds and cover. Build in digital Thermostat controller to regulate the water temperature from ambient to boiling point.

CM 0115
Le Chatelier Water Bath complete

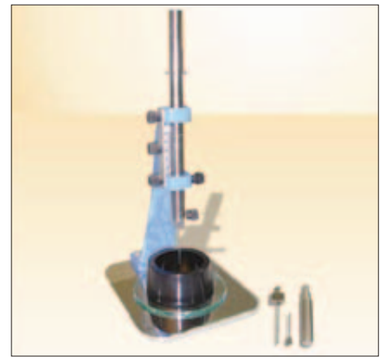
Vicat Apparatus

Standards: EN 196-3, 13454-2, ASTM C187, C191, AASHTO T129, T131

The Vicant Apparatus is used for determining setting time and consistency of cement by Vicat Method.
Comprises:
The test set comprises of Vicat Frame, Vicat Mould, Initial and Final needles, glass plate and consistency plunger.

CM 0116
Vicat Frame Complete

CM 0117
Initial Set Needle1.13 mm dia, EN
CM 0118
Final Set Needle1.13 mm dia, EN
CM 0119
Initial Set Needle 1 mm dia, ASTM
CM 0120
Vicat Mould, EN
CM 0121
Vicat Mould, ASTM
CM 0122
Consistency Plunger



Automatic Vicat Apparatus

Standards: EN 196-3:2005, 13279-2, 480-2, ASTM C187, C191, BS 4550, AASHTO T129, T131

The Automatic Vicat Apparatus is designed and manufactured using the most recent and sophisticated technology, it is used for the initial and final setting time determination of cements or mortar pastes.
The apparatus is manufactured with anticorrosion components to be used in places with humidity up to 90% and 20°C.

The entire test is made in a fully automatic way and gives a very precise and repeatable result with controlled temperature as required by EN Specifications.
The results are printed on the incorporated printer and this eliminates the manual operations of installing and zeroing the paper graph on the drum.
The use of the appliance is extremely simplified by the guiding menu that is available in different languages.

CM 0123
Automatic Vicat Apparatus Complete with EN and ASTM Initial and Final needles, Consistency Plunger, 1 x EN and ASTM Mould and Glass Plate.
Accessories:
CM 0124
Consistency Plunger
CM 0125
Initial needle, 1.13 mm dia EN
CM 0126
Final needle, 1.13 mm dia EN
CM 0127
Initial needle, 1 mm dia ASTM
CM 0128
Final needle, 1 mm dia ASTM
CM 0129
Needle Cleaning Device
CM 0130
Windows Software and RS232 Cable
CM 0131
Printer Paper Rolls, pack of 10
CM 0132
Mould Tank

CM 0133
Thermostatically-controlled Heating/Cooling System, for testing samples under water as per EN 196-3.

Cement Shrinkage Test

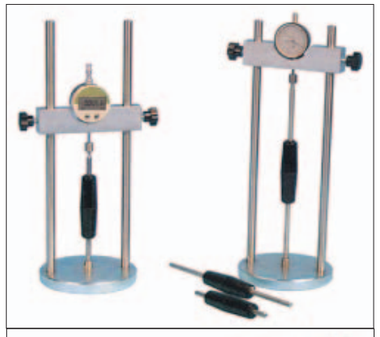
Standards: EN 1367- 4,EN 12617- 4,ASTM C151,C490,BS 1881:5,6073

The Cement Shrinkage Test is used to determine the accelerated soundness (autoclave method) and length changes of 40x40x160 mm and other sizes of cement prisms.

Comprises:
The set comprises of length measuring frame, two or three gang steel mould according to the related standard, steel inserts for moulds and reference rod.

CM 0134
Drying, Shrinkage, Length Comparator with adjustable-height beam

CM 0135
Dial gauge 0,002mmx10mm
CM 0136
Digital dial gauge 0.001mmx20 mm
CM 0137
Reference Rod 160mm EN12617–4
CM 0138
Reference Rod 305 mm ASTM C490
CM 0139
Three Gang Prism Mould 40x40x-160mm to EN12617-4
CM 0140
Two Gang Prism Mould 25x25x285 mm to ASTM C490
CM 0141
Steel Inserts, 10 pieces



Autoclave Apparatus

Standards: ASTM C151, ASTM C141, AASHTO T107

The Autoclave Apparatus used for accelerated soundness tests on cement.

It provides high pressure steam up to 25 Bar to help cure the cement speciments.

Comprises :
The Autoclave is made of high pressure steam chamber of dimension 114 mm ID x 406,4mm Stainless steel chamber with bolted steel cover, which is enclosed in eat insulated metal housing.

Double scale indication pressure gauge with thermostat regulator and safety valve automatically shut off with beep reminding after sterilization.

CM 0142
Autoclave Apparatus Complete

Spares:

CM 0143
O-ring Lid Sealing Gasket
CM 0144
Specimen Rack

Heat of Hydration Apparatus

Standards: BS 4550, ASTM C186

This Apparatus is required for determining the heat of hydration of cement as expressed in calories per gram.

Comprises:
A wide mouthed double walled vacuum flask with a cork stopper 38 mm thick and an insulated container for flask.

A beckman thermometer held tightly by the cork stopper in such a way as to avoid accidental contact with stirrer blades and a reading lens.

To facilitate removal, the cork stopper is divided into two halves.

A constant speed stirrer (Double-bladed propeller type) extending to within 38 mm from the bottom of the flask.
A funnel (Gooch Type) with a stem of 6 mm inner dia and a body approx 25 mm long and 25
mm dia is fitted to the cork stopper for introducing the sample.

CM 0145
Heat of Hydration Apparatus Complete

Accessories:

CM 0146
Vacuum Dewar Flask
CM 0147
Beckman Thermometer, range 6°C ±0.01°C
CM 0148
Glass Filling Funnel

Automatic Mortar Mixer

Standards: EN 196-1, 196-3, 413-2, 459-2

The Automatic mixer is perfect to mix mortars and cement material according to the required standards.

The mixer is very rigid and durable with a planetary motion for its paddle.

The mixer is electronically controlled; it has two different speeds that can be operated either on manual or automatic program mode.

Thirty seconds after starting the mix the sand is automatic discharged into the mixing bowl.

CM 0149
Automatic Mortar Mixer
CM 0150
Automatic Sand dispenser
CM 0151
Mixing Bowl 5 Ltr, Stainless Steel complies with EN 196
CM 0152
Paddle, stainless steel complies with EN 196
CM 0153
Scraper

Automatic Digital Mortar Mixer

Standards: EN 196-1, 196-3, 413-2, 459-2, ASTM C305

Automatic Digital Mortar Mixer is perfect to mix mortars and cement material according to the required standards.

The mixer is has the latest technology with a programmable mixing cycles conforming to EN 196-1, EN 196-3 and ASTM C305.

It has Acoustic signal synchronised with cycle steps, complete with automatic sand dispenser and Ergonomic and safe design.

CM 0154
Automatic Digital Mortar Mixer complete including sand, cement and water dispencer.

CM 0155
Mixing Bowl 5 Ltr, Stainless Steel complies with EN 196
CM 0156
Paddle, stainless steel complies with EN 196
CM 0157
Scraper

Manual Mortar Mixer

Standards: EN 196-1, EN 196-3, EN 413-2, EN 459-2

The Manual mixer is a basic mortar and cement mixer according to the required standards.

The mixer is controlled by an on/off switch. It has two different speeds that can be operated on manual mode.

CM 0158
Manual Mortar Mixer
CM 0159
Mixing Bowl 5 Ltr, Stainless Steel complies with EN 196
CM 0160
Paddle, stainless steel complies with EN 196
CM 0161
Scraper

Flame Photometer

Standards: EN196-21;ASTM C114

The Flame Photometer is a device used in inorganic chemical analysis to determine the concentration of certain metal ions, among them sodium, potassium, lithium, Barium and calcium.

In principle, it is a controlled flame test with the intensity of the flame colour quantified by photoelectric circuitry.

The instrument is fitted with automatic flame failure detection for user safety, making it ideal for use in laboratory, industrial sites and educational applications.

CM 0162
Flame Photometer supplied complete with Na, K, Ba, Ca and Li filters, connecting hoses and clips, compressor plug and drain trap

Muffle Furnace, Loss on Ignition

Standards: EN 196-2, EN 459-2, BS 1016:4, ASTM D2361, D2795

The Muffle Furnaces are widely used for determining various properties of construction materials such as the Loss on Ignition.
Vertical lift door directs heat away from user and saves counter space.
A safety interlock switch disconnects power when the door is open.

Vertical lift door has maximum access with minimum head room for easy loading and unloading.

CM 0163
Muffle Furnace, 4.2 liters cap. 1200 C temp
CM 0164
Muffle Furnace, 7.5 liters cap. 1200 C temp
CM 0165
Muffle Furnace, 15 liters cap. 1200 C temp
CM 0166
Muffle Furnace, 22 liters cap. 1200 C temp

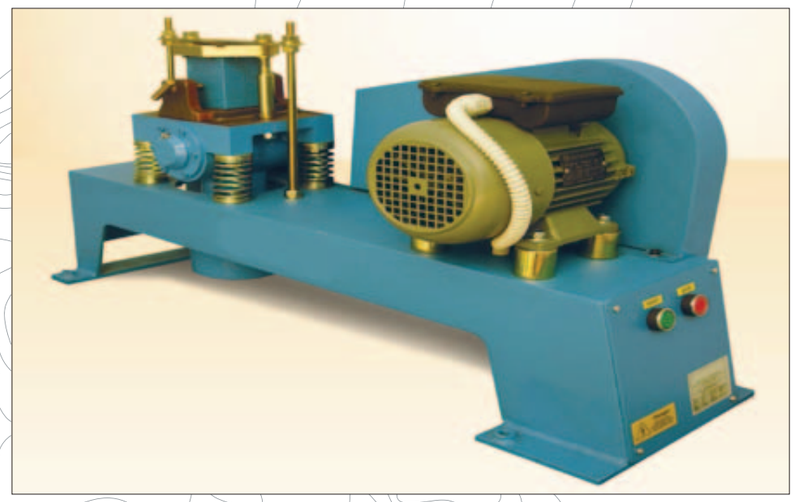
Vibrating Machine

Standards: BS 4550

The Vibrating Machine is perfect for the preparation and compaction of 70.7 mm mortar cube specimens.

The vibrating shaft of the machine allows each sample to be vibrated at 12000 cycles per minute.
Fitted with setting timer the vibrating machine can stop automatically when set time is completed.

CM 0167
Vibrating Machine

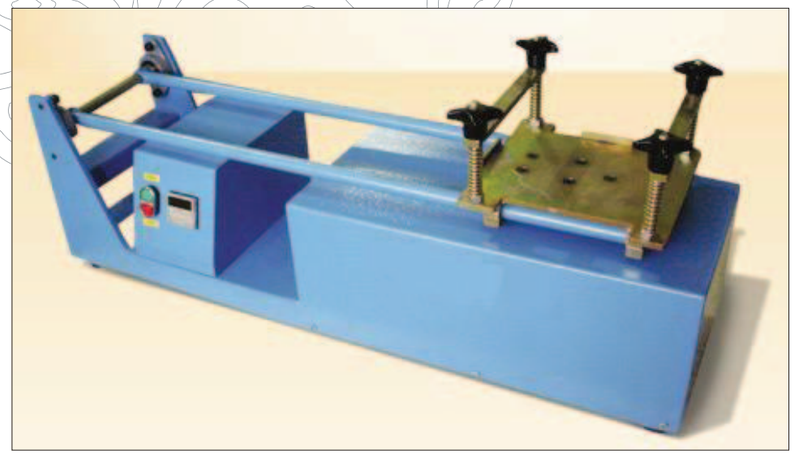


Jolting Table

Standards: EN 196-1

Jolting table is used for mould compacting of 40.1x40x160 mm cement specimens and consists of mould table seated on a rotating cam driven at 60 revolutions per minute.
The Jolting Table is 15.0 mm drop equipped with counter which provides automatic shut off at end of preset drop numbers.
Rapid mould lock and release system allows easy and quick operation.

CM 0168
Jolting Table

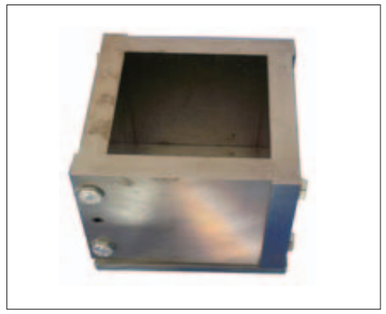


70.7 mm Cube Mould

Standards: EN 196-1, ASTM C109, BS 4550

The 70.7 moulds have been manufactured from steel in the relevant British Standard and all internal surfaces are machined.
Supplied complete with baseplate.
All dimensions and specifications comply with the related standards.

CM 0169
70.7 mm Cube Mould

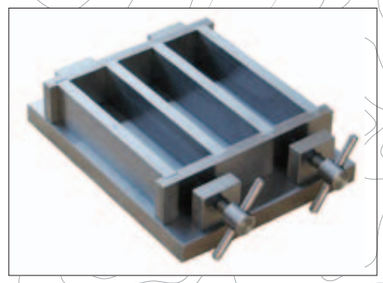


Three Gang Mould

Standards: BS 3892-1, 4551-1, EN 196-1, 413-2, 459-2, 1744-1, 1015-10,11, 13454-2.

The 40.1x40x160 mm Three Gang Mould is manufactured of steel with hardness over HV400 the surface is heat treated to comply with the related standards.

CM 0170
Three Gang Mould 40.1x40x160 mm
CM 0171
Feeding Hopper
CM 0172
Scraper double-ended
CM 0173
Standard Reference Sand.
EN 196-1 2006, 1350 gram per Bag



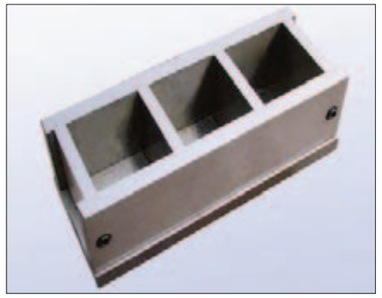
Three Gang Cube Mould

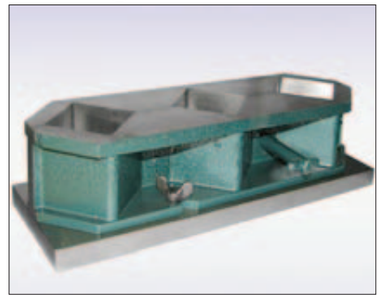
Standards: BS 1881-131, ASTM C109, EN 196-1

The 50x50x50 mm Three Gang Cube Mould is manufactured of cast ion, all internal surfaces are machined.
All dimensions and specifications comply with the related standards.

CM 0174
Three Gang Cube Mould

This cast ion three gang mould is a diagonal arrangement 50mm mortar cube moulds with a detachable brass base plate.
Wing nut clamps lock the mould to the base while stainless steel thumbscrews secure the halves tightly together.
Large screed off upper surface area makes this mould a preferred choice.





CM 0175
Three Gang Cube Mould with simple cube release mechanism

Briquette Mould

Standards: BS 4550

The Briquette Mould is used for casting cement briquettes for tensile strength testing. Manufactured of brass it is a two part split mould with thumb screws for quick assembling and dismantling of the mould.

The minimum cross section of the briquettes cast is 25.4 mm x 25.4 mm. Supplied complete with a steel base plate.

CM 0176
Briquette Mould

Plunger Penetration Apparatus, Consistency of Masonry Cement

Standards: EN 413-2, 459-2, 1015-4, DIN 4211

The plunger penetration apparatus is used to determine the consistency of fresh mortar, lime and mansory cement.

The base is foreseen of a device to locate the test cup.
The height of the drop can be accurately adjusted to 100 mm.

Supplied complete with test cup and tamper, both made from anodized aluminium. dimension 200x200x700 mm

CM 0177
Plunder Penetration Apparatus complete

Spares:

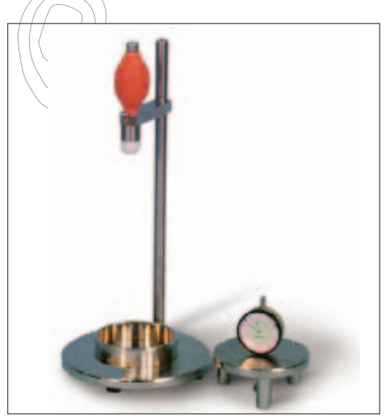
CM 0178
Test cup
CM 0179
Tamper

Dropping ball apparatus

Standards: BS 4551-1, 6463-4

The dropping ball apparatus is used to measure the consistency of cement mortars, this allows a 25mmdiameter acrylic ball to fall freely from a standard height of 250mminto a brass ring mould containing a mortar specimen with a carefully prepared surface.
The depth of the ball penetration into the mortar gives the specimen consistency.

The apparatus consists of a dropping device mounted on a stand, acrylic ball and a 100mm diameter x 25mm deep mould.
The base of the stand is machined with a Chrome finish.
CM 0180
Dropping Ball Apparatus
CM 0181
Ball Penetration measuring Device with dial gauge 25 x 0.01 mm



Gillmore Apparatus

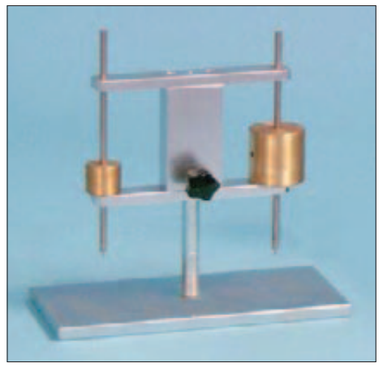
Standards: ASTM C91, C141, C266 AASHTO T154

The Gillmore apparatus is used to determine the setting time of cement. Vertical support shaft has a device to maintain the horizontal arms in alignment.

Support assembly is adjustable in position. The two steel weights needles are calibrated to meet Specifications.

Needle points are from stainless steel. The initial setting needle has dia.2,12 mm and weight of 113 g, while the final setting needle has dia.1,06 mm and weight of 453,6 g.

CM 0182
Gillmore Apparatus



Humidity Curing Cabinet

Standards: BS 3892-1, EN 196-1 459-2

The Humidity Curing Cabinet is used for curing cement test samples. The curing cabinet provides 50 ± 0.5°C temperature and 98% humidity for cement specimens by an immersion heater and refrigerator unit which are supplied complete with the cabinet.

The internal chamber and racks are made of stainless steel.
The cabinet is equipped with digital control unit to monitor the temperature and humidity and recording chart.

Specification

Capacity:	320 Litres
External Size:	66 x 64 x 175 cm
Internal size:	49 x 51 x 127 cm
Temp range:	+5.0°C to +60°C
Fluctuation:	± 0.2°C
Variation:	± 0.5°C
Recorded chart:	7 day
Temperature:	0 – 50°C
Humidity:	0 – 100% RH
shelves:	10 shelves

CM 0183
Humidity Curing Cabinet
CM 0184
Recording Chart

Air Content Meter for Mortar, Masonry Cement and Lime

Standards: EN 459-2

The Air content meter for mortat is designed to determine the air content in cement mortar, cement paste and lime mortar.

Made from cast aluminium, the test pot one litre capacity and the upper part are air-tight sealed by means of two quick action spring clamps.

The whole is connected to a dial gauge directly indicating the air entrainment in percentage, with range 0 - 50%.

A built-in operated air pump is also included. The push-buttons TEST and CORRECTION are arranged to perform the test in a simple and quick system.

CM 0185
Manual Air Content Meter,
1 lt Capacity
CM 0186
Motorised Air Content Meter,
1 lt Capacity, with an electric mini-compressor to keep the air pressure constant

Cement Compression and Flexural Machine

Standards: EN 196-1, 196-3, 413-2, 459-2, ASTM C305

The Cement Compression and Flexural Machine 25/250 KN is Fully Automatic and has been designed for testing the compression on the 50x50x50 mm cube moulds, 40x40mm and the flexural on the 40.1x40 x160 mm prism moulds according to the related standards.

The machine consist of very rigid two column frame with double test chamber, automatic closed loop controlled hydraulic power pack and LCD graphic digital control and readout unit.

Very silent power pack can load a specimen between 1 kN/sec to 20 kN/sec.
On the dual stage pump high delivery low pressure pump is used for rapid approach and low delivery high pressure radial piston pump is used for test execution.

On all power packs maximum pressure valve is used to avoid machine overloading.

CM 0187
Semi Automatic Digital Cement Compression and Flexural Machine 25/250KN
CM 0188
Full Automatic Digital Cement Compression and Flexural Machine 25/250KN
CM 0189
Semi Automatic Digital Cement Compression 250KN
CM 0190
Full Automatic Digital Cement Compression 250KN

Accessories:

CM 0191
Compression Jig Assembly for EN 196-1
CM 0192
Compression Jig Assembly for ASTM C109
CM 0193
Flexure Jig Assembly for EN 196-1
CM 0194
Flexure Jig Assembly for ASTM C109

Cement Compression and Flexural

Standards: EN 196-1, 196-3, 413-2, 459-2, ASTM C305

On both frame the load is measured by load cell to get accurate test results. The machine is supplied with safety doors and can test samples up to 250KN.

The LCD graphics data acquisition and controls system is designed to control the machine and processing of data from load cells.

The digital graphic display allows real time load vs time graph. At the end of the test cycle, the results can be stored in memory (up to 250 test results) or downloaded to a PC using the software format.

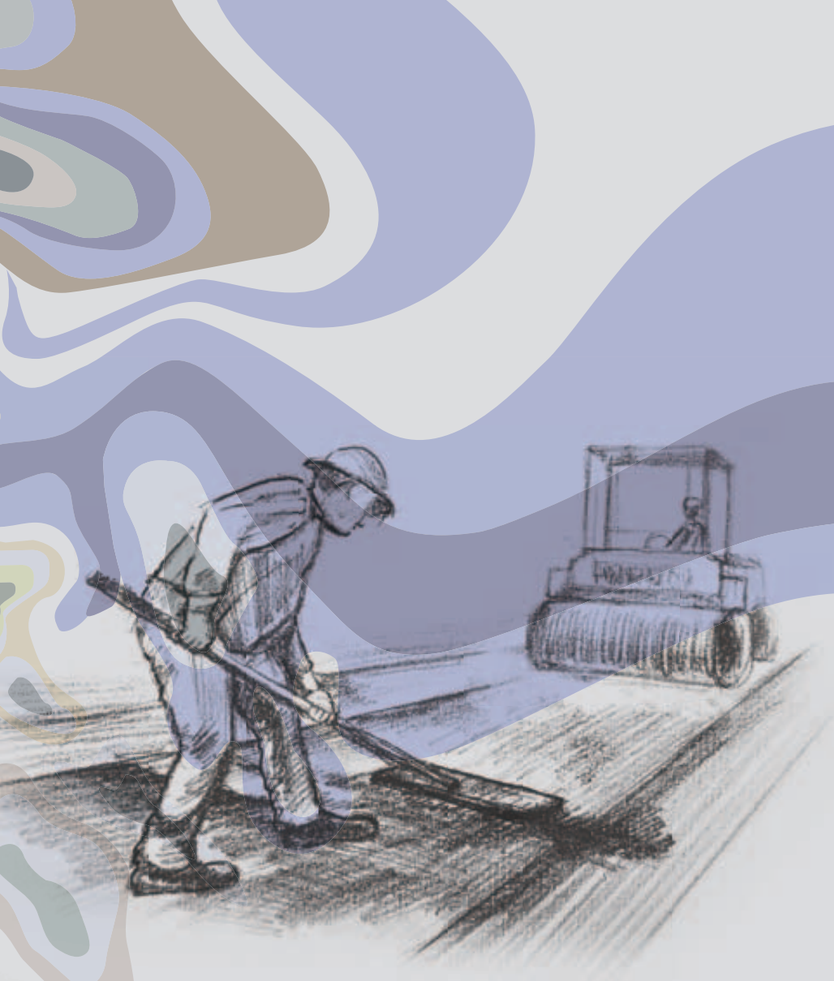
asphalt equipment

production

Asphalt is a sticky, black and highly viscous liquid or semi-solid that is present in most crude petroleum. It is most commonly used in road construction.

The material consists essentially of two ingredients, aggregate and bitumen which is the binder. A number of technologies allow this simple mix to have an almost infinite number of mixtures which may either be specified or designed to suit a particular engineering requirement.

It is therefore important that equipment and test methods are used to determine the different physical and chemical properties of any given asphalt mix. Such parameters include binder content, binder percentage, aggregate grading, void content, resilient modulus, indirect tensile fatigue cracking, creep, softening point, flash and fire point, water content, loss in mass, elongation, elasticity, viscosity and adhesion.



Reflux Extractor

Standards: ASTM D2172, AASHTO T164

The Reflux Extractor is used for the determination of quantitative amount of bitumen in hot-mixed paving mixtures and pavement samples.

The Reflux Extractor is available in two sizes, 1000 gr and 4000 gr capacity models.

The apparatus comprises of a cylindrical glass jar, two wire mesh cones with interlocking frames, a water condenser with inlet/outlet tubes and hot plate.

AS 0101
Reflux Extractor 1000 gr complete
AS 0102
Reflux Extractor 4000 gr complete
AS 0103
Filter Paper for the 1000 gr model (pack of 50)
AS 0104
Filter Paper for the 4000 gr model (pack of 50)
AS 0105
Replacement glass for the 1000 gr
AS 0106
Replacement glass for the 4000 gr

Centrifuge Extractor

Standards: EN 12697-1, ASTM D2172, AASHTO T164A

The centrifuge extractor is used for the determination of bitumen percentage in bituminous mixtures.

Comprises:
A removable precision-machined rotor bowl housed in a cylindrical aluminium box.
It is driven by an electric motor fitted with AC drive (inverter) with the double function of speed control up to 3600 r.p.m. regardless of the frequency (50 or 60 Hz) and electrical braking.
The rotating unit is suspended on the base by four calibrated springs, which assure a perfect stability all over the test.
The cover is precisely machined and fitted with solvent resistant gasket to avoid leakages.

AS 0107
Centrifuge Extractor 1500 gr
AS 0108
Centrifuge Extractor 3000 gr
AS 0109
Filter Paper for 1500 gr (pack of 100)
AS 0110
Filter Paper for 3000 gr (pack of 100)

Spares:
AS 0111
Replacement Bowl, 1500 g
AS 0112
Replacement Bowl, 3000 g
AS 0113
Replacement Gasket for 1500 g
AS 0114
Replacement Gasket for 3000 g

Asphalt Mixer

Standards: EN 12697-35, BS 598-107

The Asphalt Mixer is designed for mixing Asphalt samples that can be used for mechanical tests as for example compaction, indirect tensile, Marshall etc.
The bituminous mix must be prepared at prescribed temperature for this reason the mixer can equipped with thermostatically controlled heater.
The mixing head rotates in the 11 different speed positions from 10 to 240 r.p.m. and the beater from 20 to 480 r.p.m.
The user can choose speeds easily by using switch fitted to the machine.

AS 0115
Asphalt Mixer 5 ltr complete with all accessories
AS 0116
Asphalt Mixer 10 ltr complete with all accessories

Spares:
AS 0117
Stainless Steel Bowl 5 ltr
AS 0118
Stainless Steel Bowl 10 ltr
AS 0119
Stainless Steel Beater for the 5 ltr
AS 0120
Stainless Steel Beater for the 10 ltr

Asphalt Mixer with seperate controller

Standards: EN 12697-35, BS 598-107

This Asphalt mixer is designed for mixing of samples and can be controlled externaly using switch key.

The mixing head rotates in the speed of 62 and 125 r.p.m. and the beater 140 and 285 r.p.m.

AS 0121
Asphalt Mixer 5 ltr complete with all accessories

Spares:

AS 0122
Stainless Steel Bowl 5 ltr
AS 0123
Stainless Steel Beater for the 5 ltr

Isomantle Heater

The Isomantle Heater is Used to heat the mixing bowl of (5 litres cap.) and (10 litres cap.) mixer.

It is fitted with an electronic temperature regulator and can be easily fitted to the mixer under the bowl. Max. temperature 180 °C

AS 0124
Isomantle Heater 5 litres cap
AS 0125
Isomantle Heater 10 Litres cap

Manual Marshall Compaction

Standards: ASTM D1559, D5581, BS 598-107, EN 12697-30

The Manual Marshall Hammer Assembly is used to compact Marshall specimens manually.

Comprises:
The assembly consists of Compaction Hammer, Compaction Pedestal, Hammer Guide and Compaction Mould Holder.

AS 0126
Manual Marshall Compactor complete with all accessories

Accessories and Spares:
AS 0127
Compaction Hammer, BS 598
AS 0128
Compaction Pedestal, BS 598 comprising a 300 mm sq x 25 mm thick steel plate
AS 0129
Compaction Pedestal comprising a 12 inch square x 1 inch thick steel plate, ASTM
AS 0130
Steel Block 100 mm diameter x 50 mm height. For heating the compaction hammer foot according to BS 598-107
AS 0131
Paper Discs. 99 mm diameter pack of 100
AS 0132
Replacement glass for the 1000 gr

Compaction Mould See AS 0145

Automatic Marshall Compactor

Standards: EN 12697-10, 12697-30, BS 598-107

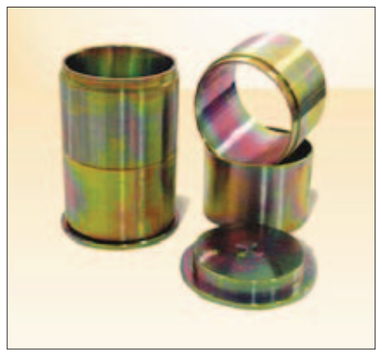
The Automatic Compactor is made of a rugged construction to withstand work.
It provides a consistent and even degree of compaction.
The Compactor comprises of a compaction pedestal, automatic control system, secure base of 300 mm square x 25 mm thick steel plate.

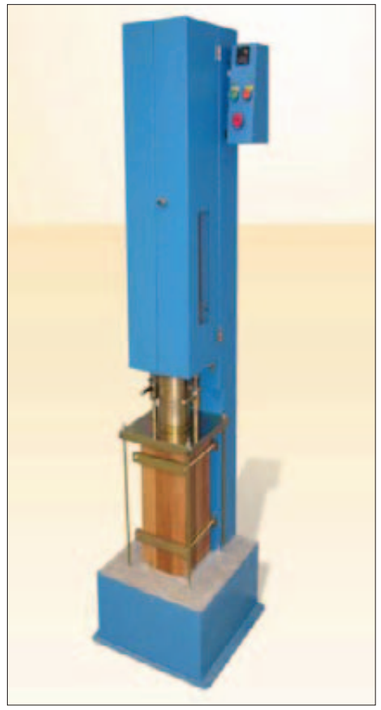
After setting the required number of blows the Automatic Compactor lifts the 4535 g ±20 g hammer and releases it at the desired height of 457mm ±3mm.

The control system comprises of operating light, start / stop switch and a reading counter used to set the desired number of blows.

AS 0133
Automatic Compactor

Compaction Mould See AS 0145
Paper Discs see AS 0131
Steel Block See AS 0130





Marshall Stability Machine

Standards: EN 12697-12, EN 12697-23, EN 12697-34

The Marshall Stability Machine is used to determine the load and flow values of bituminous mixtures.

The Marshall is composed by a robust and compact two-column frame with adjustable upper cross beam driven by an electromechanical ram with a maximum capacity of 50 kN and a data acquisition and processing system.

The Marshall Stability Machine can be hand operated by a lateral hand wheel for calibration purposes.
The mechanical jack raises the lower crossbeam at a constant speed of 50.8 mm/min.

The limit switches are provided for the both, bottom and top limit of travel.
The Automatic measuring system consists of a 50 kN capacity strain gauge load cell is fitted to the upper cross beam to read stability values and 25 mm x 0.001 mm displacement transducer fitted to the Breaking Head.

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The limit switches are provided for the both, bottom and top limit of travel.
The Automatic measuring system consists of a 50 kN capacity strain gauge load cell is fitted to the upper cross beam to read stability values and 25 mm x 0.001 mm displacement transducer fitted to the Breaking Head.

The Manual measuring system consists of a 50 KN capacity load ring and dial gauge graduated 0.01 mm with 25 mm travel.

The Marshall Stability Machine can be hand operated by a lateral hand wheel for calibration purposes.

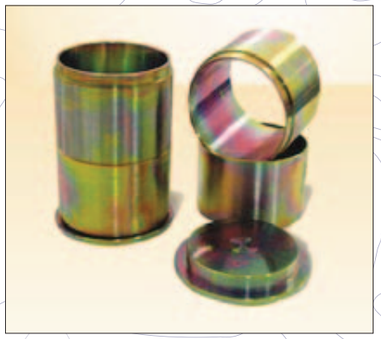
The mechanical jack raises the lower crossbeam at a constant speed of 50.8 mm/min.

The limit switches are provided for the both, bottom and top limit of travel.

AS 0134
Marshall Stability Machine complete with all accessories
AS 0135
Breaking Head 100 mm
AS 0136
Breaking Head 150 mm
AS 0137
Load Ring assembly complete with dia gauge, 50 KN
AS 0138
S-type Load Cell 50 KN
AS 0139
Flow Transducer
AS 0140
Data Acquisition and Control System
AS 0141
RS232 cable and PC Software
AS 0142
Dial gauge graduated 0.01 mm with 25 mm travel with stem brake unit and flow meter pedestal, BS/EN
AS 0143
Dial gauge graduated 0.001 inches with 1 inch travel with stem brake unit and flow meter pedestal, ASTM
AS 0144
Indirect tensile assembly 100 mm

Compaction Mould

Compaction Mould, Comprising of Base Plate, Mould Body and Collar.
AS 0145
Compaction Mould



Universal Sample Extruder

Standards: EN 12697-1
ASTM D2172, AASHTO T164A

The Universal Sample extruder is designed to easily extrude samples from Marshall moulds.
It has 30kN capacity and supplied complete with manual hydraulic jack.
The extruder can be also used for CBR and Proctor moulds with suitable adaptors.

AS 0146
Universal Sample extruder

Binder Recovery Apparatus

Standards: BS 598-102, BS 5284, EN 12697-1

The Binder Recovery Apparatus comprises of a thermostatically controlled stainless steel heated water bath (with integral shelf), vacuum pump with regulator, gauge and manifold all mounted a sturdy base with anti-vibration rubberised feet.
This double sample unit is supplied complete with rubber hose, bungs, two flasks and a set of polyproylene spheres to aid insulation and reduce the risk to the operator from splashes of hot water.
Individual ball valves allow the use of a single sample flask if required.

AS 0147
Binder Recovery Apparatus

Hubbard-Carmick Specific Gravity Bottles

The Hubbard-Carmick Specific Gravity Bottles used with viscous fluids, semi-solid bitumen and emulsions. Made of Borosilicate Glass they come in two shapes.
AS 0148
Hubbard-Carmick Specific Gravity Bottle conical 25 ml
AS 0149
Hubbard-Carmick Specific Gravity Bottle normal 24 ml

Bacon Sampler

Standards: ASTM D140
AASHTO T40

The Bacon Sampler is to obtain samples or sedimentation from the bottom of a container.
The plunger keeps the sampler closed until it strikes bottom, then the sampler opens and fills. The plunger closes again when the bomb is withdrawn, forming a tight seal.
Samples can also be obtained from any depth by attaching a cord to the top of the plunger, raising it will to fill the sampler and lowering it to close the sampler.

AS 0150
Bacon Sampler, 237 ml capacity

Manual Bitumen Penetrometer

Standards: EN 1426, BS 2000-49, ASTM D5, AASHTO T 49

The Penetrometer is used to determine the penetration of bituminous samples under constant load, time and heat. The Penetrometers are intended for measuring the consistency of bituminous materials. Penetration readings are quickly taken from a measuring precision gauge.

Comprises:
The Penetrometer consists of cast iron base with leveling screws, digital penetration measurement gauge 0.01 mm precision
Release button - Automatic zeroing.
Needle, transfer dish and penetration moulds.

AS 0151
Manual Penetrometer complete with all accessories

Accessories:
AS 0152
Penetration Needle, hardened steel verification certificate. For testing to BS 2000-49 and ASTM D5
AS 0153
Penetration Needle (unverified)
AS 0154
Penetration Tin for penetrations between 200 and 350
AS 0155
Penetration Tin for penetrations below 200

Semi Automatic Bitumen Penetrometer

Standards: EN 1426, BS 2000-49, ASTM D5, AASHTO T 49

The Semi Automatic and Full automatic Penetrometer gives you better control when used to determine the penetration of bituminous samples. It comes with build in digital controler and readout unit.
During the test, depth penetration is permanently displayed both in units and tenth of units (0.01 mm).
An optoelectronic detection of depth penetration with an automated approach and a levelling system for conductive samples are available.

AS 0156
Semi Automatic Penetrometer complete with all accessoriesr
AS 0157
Full Automatic Penetrometer complete with all accessories
AS 0158
Transfer Dish
AS 0159
Weight 50 gr

Softening Point (Ring and Ball) Apparatus

Standards: ASTM D2172, AASHTO T164

The Ring and Ball method of determine the softening point bituminous materials.
The softening point is considered to be the temperature of the fluid when the ball penetrates the specimen and touches the lower plate.
This test method covers the determination of the softening point of bitumen in the range from 30 to 157°C (86 to 315°F) immersed in distilled water (30 to 80°C), USP glycerin (above 80 to 157°C), or ethylene glycol (30 to 110°C)

Comprises:
The Ring and Ball Apparatus comprises hotplate with magnetic stirrer, 2 steel balls, ball centering guide, 2 rings, glass vessel and thermometer.

AS 0160
Softening Point (Ring and Ball) Apparatus complete with all accessories
AS 0161
Rings with collars, pack of 2
AS 0162
Thermometer ASTM 15°C IP 60°C
AS 0163
Thermometer ASTM 16°C IP 61°C
AS 0164
Balls, pack of 50
AS 0165
Pyrex Glass Jar, 85x130mm dia.

Manual Cleveland, Flash and Fire Point, Open Cup

Standards: ASTM D92, DIN 51376 ISO 2592

The Cleveland test method describes the determination of the flash and fire point of petroleum products such as bituminous material with flash points above 79°C (175°F) and below 400°C (752°F)

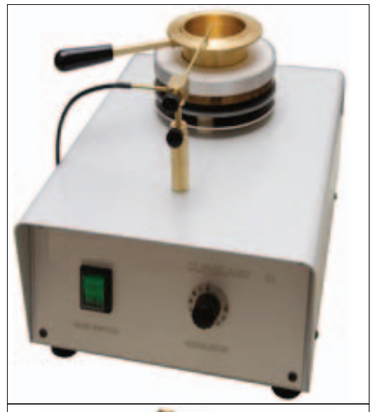
Electrically heated by electronic regulator, mounted on a case painted with anti-acid epoxidic products.

Calibrated brass cup, gas ignition device fitted with a pivot manually passing through the cup. Fitted with pincers for thermometer.

The Semiautomatic type is controlled by digital timer.

AS 0166
Cleveland, Flash and Fire Point complete
AS 0167
Semi Automatic Cleveland, Flash and Fire Point complete

Accessories:
AS 0168
Gas Cylinder Empty, 3kg
AS 0169
Gas Reducer
AS 0170
Rubber Tube Joint and Tube, 5 meter
AS 0171
Thermometer ASTM 11°C IP 28°C
Spares:
AS 0172
Gas Ignition Device,Pack of 3
AS 0173
Calibrated Brass Cup



Digital Automatic Cleveland, Flash and Fire Point, Open Cup

Standards: ASTM D92, DIN 51376 ISO 2592

The Digital Automatic Cleveland test Flash and Fire Point on Bituminous products, gas oils, fuel oils, lubrificants.
Suitable for flash and fire point detection on different substances and waste materials, having a flash point over 79°C.
The sample is warmed up according the methods. When the sample reaches the selected test temperature, the flame is passed automatically above the sample.

When the flash point is reached, the detection is done by an ionisation detector. For fire point detection, the sample continues to be heated until permanent flame is detected by the second probe, then the auto extinguisher will be placed on the top of the test cup.

Measuring Parameters
- Temperatures: in °C
- Measuring range:
+79°C ... +400°C
- Resolution: 0.06 °C
- Accuracy: ± 0.1 °C

The Software is Windows Based (Windows 2000, XP, Vista) and is able to manage up to 10 analytical heads simultaneously.

- User friendly interface
- All analytical parameters recoded
- Customisable analysis parameters and methods
- Customizable results report
- Printable graphs and results

AS 0174
Digital Automatic Cleveland, Flash and Fire Point complete

Digital Abel Flash Point

Standards: EN 924 EN 13736, IP 170 IP 491 IP 492 ISO 1516 ISO 3679 ISO 13736

The Digital Abel Flash Point test method determines the closed cup flash point fo petrolium products such as Bitumen and other liquids havin flash point between -30°C and 71°C inclusive.

Electrically heated by electronic regulator, mounted on a case painted with antiacid epoxidis products.
Calibrated brass crucible, cover with gas ignition device allowing to ignite the testing sample by a manual glideopening.
Motor stirrer, air bath and water bath are made croniumplated cooper.
Digital thermometer with thermocouple.
With internal cooling coil.

AS 0175
Digital Abel Flash Point complete
AS 0176
Low Temperature Thermostatic Bath and Circulator up to -45°C
AS 0177
Gas Cylinder Empty, 3 kg
AS 0178
Gas Reducer 30 mbar
AS 0179
Rubber Tube Joint and Tube, 5 meter
AS 0180
Thermometer IP74°C
AS 0181
Thermometer IP75°C
AS 0182
Thermometer IP2°C

Digital Automatic Abel Flash Point

Standards: EN 924 EN 13736, IP 170 IP 491 IP 492 ISO 1516 ISO 3679 ISO 13736

The Adel Flash point is used on petroleum products having a flash point between -18°C and 71°C (kerosene and solvents).

Suitable for flash point detection on different substances such as bitumen and other solvents.

The sample is warmed up according to the methods.

When the sample reaches the selected test temperature, the shutter is opened and the ignition system introduces itself automatically.

If the flash point is reached, the detection is done by an ionisation detector.

If not, the shutter closes again and the sample continues to warm up until the next test temperature.

AS 0183
Digital Automatic Abel Flash Point complete

Distillation of Cut-Back Asphaltic (Bituminous) Product

Standards: ASTM D 402

Gas-heated, 500ml side arm distillation flask, Ø117mm chimney with insulated metal shield, insulated cover split in two halves, Ø100mm lamp screen, two sheets of 16 mesh gauze, 100ml cylinder lamp, empty tube glass cooler, nozzle extensor made in glass, 500ml ball.

Supported on a height adjustable platform.

AS 0184
Gas Distillation of Cut back Asphaltic Apparatus

Dean and Stark Apparatus

Standards: ASTM D95

The Dean and Stark Apparatus
3 places test method covers the determination of water in the range from 0 to 25 % volume in petroleum products, tars, and other bituminous materials by the distillation method. Mantle heater with steel rod and clamp, 500ml flask, condeser and graduated 10ml receiver.

AS 0185
Dean and Stark Apparatus complete
AS 0186
Flask, 500ml, tapered joint 24/40, pack of 3

Loss on Heating Oven (TFOT)

Standards: EN 12607-2, EN 13303, BS 2000-45, 460-2, ASTM D6, D1754, AASHTO T47, T179

The Loss on Heat Oven test method is used for determining the loss in mass, the effect of heat and air on a film of semisolid bituminous materials. Completely made from stainless steel, natural ventilation, internal support (on request) rotating at 5-6rpm controlled by a geared motor located on the oven top, digital thermoregulator PID with overtemperature alam and probe, double wall locking door with toughned glass window.

AS 0187
Loss on Heat Oven
AS 0188
Rotating Shelf
Accessories:
AS 0189
Brass Sample container ASTM D6
AS 0190
Stainless Steel Sample container D1754
AS 0191
Support ASTM D1754
AS 0192
Thermometer ASTM 13°C IP 47°C

Rolling Thin Film Oven (RTFO)

Standards: BS 2000, EN 12607-1, ASTM D2872

The Rolling Thin Film Oven provides simulated short term aged asphalt binder for physical property testing. Asphalt binder is exposed to elevated temperatures to simulate manufacturing and placement aging. It also provides a quantitative measure of the volatiles lost during the aging process.

Completely made from stainless steel, forced ventilation, aluminium carriage rotating at 15rpm - circular and vertical - with 8 places for glass containers, internal fan controlled by a 1,725rpm motor, copper coil with nozzle preheating the air, flowmeter with regulator valve, digital thermoregulator PID with overtemperature alrm and probe, double wall locking door with toughned glass window.

AS 0193
Rolling Thin Film Oven
Accessories:
AS 0194
Glass Sample Containers
AS 0195
Thermometer ASTM 13°C IP 47°C
AS 0196
Drive belt, pack of 2

Ductility Testing Machine

Standards: EN 13398, EN 13589, ASTM D113, AASHTO T51

The Ductility Testing Machine used for determining the ductility of bituminous materials by measuring the elongation of briquette mould with molten bitumen in it whic is pulled apart at a specified speed and at a specified temperature. Unless otherwise specified, the test shall be made at a temperature of 77 + 0.9°F (25 + 0.5°C) and with a speed of 5 cm/min + 5.0%.

Three-place stainless steel structure with a 1.500mm stroke, transmission of 10 revolutions on square-thread traction rod, 5cm/min speed, ¼ Hp one-phase geared motor, stainless steel tank with white bottom, insulated walls, armoured stainless steel heater controlled by a digital thermoregulator with overtemperature alarm and probe, cooling coil, traction brass carriage holding moulds, circulation pump for stirring the liquids.

AS 0197
Ductility Testing Machine
AS 0198
Refrigerated Ductilometer
ASTM D113
AS 0199
Refrigerated Ductilometer
EN 13589 EN 13398

AS 0200
Ductility Briquette Mould, ASTM
AS 0201
Ductility Briquette Mould, EN 13589
AS 0202
Ductility Briquette Mould, EN 13398
AS 0203
Mould Storage

Emulsified Asphalts Apparatus

Standards: ASTM D244, D6997

The Emulsified Asphalt test methods and practices cover the examination of asphalt emulsions composed principally of a semisolid or liquid asphaltic base, water, and an emulsifying agent. Aluminium alloy boiler with annular gas lamp for heating, connection glass tube with protection shield, glass condenser for water circulation, 100ml graduated cylinder, supporting ring, bases with rods, pliers.

AS 0204
Emulsified Asphalt Apparatus

AS 0205
Thermometer ASTM 7°C pack of 2

Digital Viscometer Bath

Standards: ASTM D445, D446, D341, D2270

The Digital Viscometer Bath is used for measuring oils viscosity by Cannon-Fenske, Ubbelohde and similar capillary.

Working temperature from ambient to 150°C ±0.1°.
Borosilicate tank, cover with 5 holes 50.8mm, stainless steel control box on the cover.
Digital thermoregulator PID with overtemperature alarm and probe, cooling coil for improved control near to ambient temperature, stainless steel heater, motor stirrer, with stand-by stainless steel covers, protection Lexan jacket.

AS 0206
Digital Viscometer Bath, 5 places
AS 0207
Digital Viscometer Bath, 7 places

Accessories:
AS 0208
Viscometer Holders for Cannon Fenske, for transparent liquids, pack of 5
AS 0209
Viscometer Holders for Cannon Fenske, for opaque liquids, pack of 5
AS 0210
Viscometer Holders For Ubbelohde, pack of 5
AS 0211
Syringe Metallic

Large Digital Viscometer Bath

Standards: ASTM D445, D446, D341, D2270

The Large Digital Viscometer Bath Structure is made of stainless steel, cover with 5 holes or 7 holes, 50.8mm, temperature control by digital thermoregulator PID stability ±0.02°C and display resolution 0.01°, adjustable high and low temperature cut-out, low level liquid alarm, cooling coil, stand-by stainless steel covers, light.

AS 0212
Large Digital Viscometer Bath, 5 places
AS 0213
Large Digital Viscometer Bath, 7 places
Accessories:
AS 0214
Silicone Oil Kinematic viscosity 50 mm2/s at 25°C, -50 to +300°C, pack of 25 litres
AS 0215
Viscosity Charts ASTM D341, D2270 pack of 50

Digital Saybolt Viscometer

Standards: ASTM D88 E102, AASHTO T72

The Digital Saybolt Viscometer a device used to measure the viscosity of a fluid such as asphalt. Calibrated brass oil cup with stainless steel flowing orifice, polished and calibrated 1.76mm dia Universal and 3.15mm dia Furol.

Digital thermoregulator PID with overtemperature alarm and PT 100A probe, stirrer, cooling coil, 18/8 stainless steel water bath, insulated double wall and front opened jacket.

Monitoring the time required for the flow of specific volume to fill a 60cc container flask.

The time recorded in seconds at three different temperatures. It has 2 sample testing capacity with digital display.

AS 0216
Digital Saybolt Viscometer, 2 places
AS 0217
Digital Saybolt Viscometer, 3 places
AS 0218
Digital Saybolt Viscometer, 4 places
AS 0219
Saybolt Viscosity Flask 60 ml
AS 0220
Set of Glass Thermometers 6 pcs
AS 0221
Filter funnel With stainless steel wire mesh

Rice Test Vibrator Apparatus

Standards: ASTM D2041

The Rice Test Vibrators provide consistent shaking of vacuum pycnometers. Comes with vibrating rate control and timer.
Easy to allow quick placement and removal of Pyknometer.

AS 0222
Rice Test Vibrator Apparatus

Vacuum Pyknometer, 6000 g

Standards: ASTM D2041, AASHTO T209, T283

The Vacuum Pyknometer is a 10 ltr, 6000 gr capacity unit used in the Rice Test to determine the maximum specific gravity of bituminous.
A transparent cover for easy observation of sample testing, perforated plastic shelf, water inlet valve and tube, quick disconnect, vacuum hose and aspirator with fitting

AS 0223
Vacuum Pyknometer, 6000 g
AS 0224
Vacuum Pyknometer Set
AS 0225
Residual-pressure Manometer

Percentage Refusal Density (PRD)

Standards: BS 598-104, EN 12697-32, 13280-4

The Percentage Refusal Density is the ratio of the initial dried density of the sample to the final density (refusal density) expressed in percentage.

The sample bulk density is obtained by weighing in air and water; it is then heated in a split mould and compacted to refusal using a vibrating hammer.

The final density is then determined by weighing in air and water.

AS 0226
Percentage Refusal Density complete with accessories
AS 0227
Split Mould and Baseplate
AS 0228
Vibrating Hammer
AS 0229
Small Tamping Foot 102 mm dia
AS 0230
Large Tamping Foot 146 mm Dia
AS 0231
300mm Shank, For Tamping foot

Rate of Spread Balance

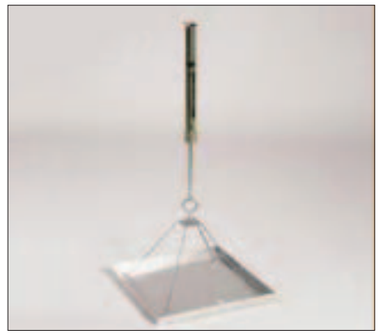
Standards: BS 598-108, EN 12272-1

The Rate of Spread Balance determine the spread of coated chippings. This is determined using the calibrated spring balance and the rate of spread of tray.

The spring load balance will accept rates of spread between 4 and 16kg/m².

Comprises:
Rate of Spread Tray, manufactured from aluminium, 300mm square complete with four chains and lifting eye attached to a spring balance.

AS 0232
Spring Balance
AS 0233
Tray and Four Chains



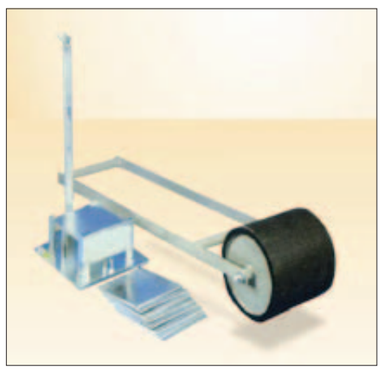
Vialit Plate, Adhesion Test Apparatus

Standards: EN 12272-3

The Vialit Plate Adhesion Apparatus is designed to assess the adhesion property of aggregates to bitumen.

The apparatus consists of a metal basement with three vertical pointed rods to hold the test plate; vertical rod 50 cm high with a shot at the upper end for the steel ball to drop; a 512 g steel ball; 6 metal test plates, hand operated rubber lined roller with lead shots ballast.

AS 0234
Vialit Plate



Benkelman Beam Apparatus

Standards: AASHTO T256

The Benkelman Beam Apparatus is designed to determine the deflection of a flexible pavement or road surface under moving wheel loads.

Comprises:
The equipment is light weight and made of aluminium for easy portability and use at any test location, the length of the Benkelman beam is 250cm and net weigh is 15 kg.

One end of the beam rests at a point under investigation while the beam is pivoted in the centre. The free end carries a dial gauge to record the deflections while the other end is kept on a stable platform.

AS 0235
Benkelman Beam Apparatus complete with all accessories

Traveling Beam Device

Standards: EN 1426, BS 2000-49, ASTM D5, AASHTO T 49

The Travelling Beam Device is used for detecting surface irregularities in both concrete and asphalt pavement.

Comprises:
The apparatus comprises of a 3-meter length beam with rigid wheels at the extremes and the middle, which can detect any vertical deviation of the surface from a straight-line between the two wheels at the ends of the machine.

Measuring capacity of the device is ±25 mm with 5mm increments. It comprises manual dye marker which can mark irregular surfaces of the road.

AS 0236
Traveling Beam Device complete
AS 0237
Autographic Recorder.
AS 0238
Charts for Autographic Recorder. Pack of 10 rolls
AS 0239
Fibre-tipped Pen

Rolling Straightedge Apparatus

Standards: AASHTO T256

The Rolling Straightedge measures depressions on the pavement surface on analogue scale 0-12mm + 0.25mm. The straightedge also has an odometer for accurate determination of distance travelled in units of 1 metre.

The Rolling Straightedge is pushed at 1-2km/h and the number of irregularities, their length and distance from start, are recorded.

The national specifications for surface regularity are then compared and the pavement accepted or rejected and or remedial work undertaken.

AS 0240
Rolling Straightedge Apparatus

concrete equipment

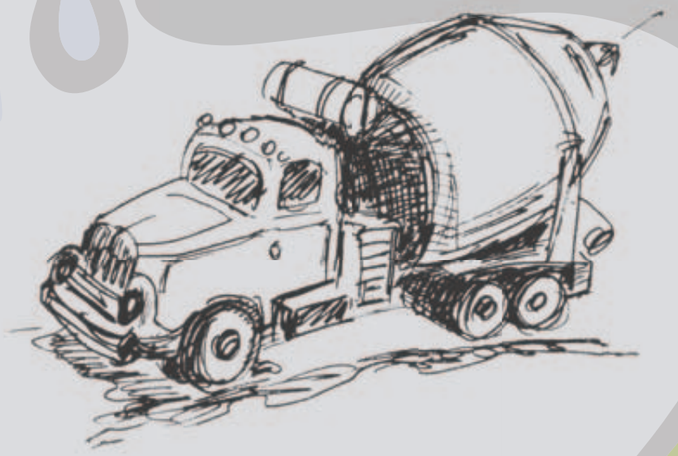
production

Concrete is used more than any other man-made material in the world, it is a composite construction material composed of cement (commonly Portland cement), coarse aggregates, sand, water and chemical admixtures.

The word concrete comes from the Latin word “concretus” (meaning compact or condensed) hence, concrete solidifies and hardens after mixing with water and placement due to a chemical process known as hydration.

The water reacts with the cement, which bonds the other components together, eventually creating a robust stone-like material that can be moulded in any shape we desire.
The quality of concrete is important if structures formed from this versatile material are to be safe and serve the purpose for which they were constructed therefore, several tests are conducted to identify the characteristics and parameters of concrete.

The testing equipment described in this section are special selected to test the physical parameters of concrete for consistency, degree of compaction, workability, setting time, segregation resistance, confined flowability, air content, bulk density, specific gravity, adhesion, water permeability and strength.



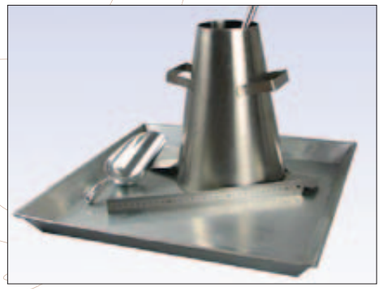
Slump Test

Standards: EN 12350–2, BS 1881: 102, ASTM C143, AASHTO T119

The Slump test method is used for the determination of the consistency, medium and high workability of fresh concrete.
Comprises:
The set comprises of slump cone, slump cone funnel, 600 mm long x 16 mm diameter tamping rod which is hemispherical at both ends, base plate, rubber mallet and steel rule. Supplied either galvanized or paint coated to prevent corrosion.

CN 0101
Slump test set complete
Spares:
CN 0102
Slump Cone Funnel

CN 0103
Base Plate
CN 0104
Rubber Mallet



CN 0105
Tamping Rod
CN 0106
Steel Rule

Waltz Container

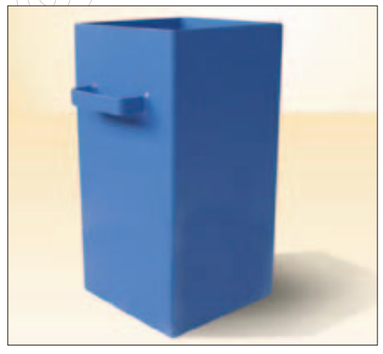
Standards: EN 12350-4

Waltz Container is used for determining the degree of compactability and consistency of fresh concrete.

Comprises:
Comprises of a 200x200x400 mm (w x d x h) metal container with two carrying handles.

Coated against corrosion.

CN 0107
Waltz Container



K-slump Test

The K-Slump Test is used for in-place measurements of forms and test moulds.

The K-slump Tester indicates correlation to the slump Test, The Probe determines the workability of concrete and the degree of compaction after being placed in the forms.

CN 0108
K-slump

Vebe Consistometer

Standards: EN 12350-3, ASTM C1170

The vebe test is a variation of the simple slump test where the concrete is subject to vibration after removal from the slump cone to determine the workability of fresh concrete.

A plastic disc is placed into contact with the upper surface of the concrete, the vibrating table underneath operates at a fixed amplitude allowing the lower surface of the disc to be completely coated with cement.

Comprises:
Vibrating table
Slump cone
Graduated rod and transparent plate
Filling cone and tamping rod.

CN 0109
Vebe Consistometer
Spares:
CN 0110
Filling Cone
CN 0111
Slump Cone

Flow Table

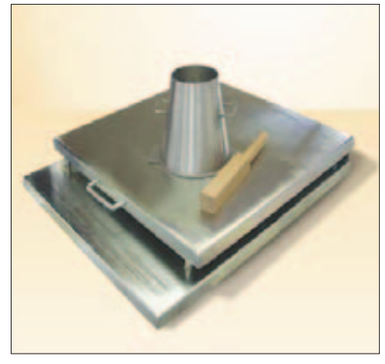
Standards: EN 12350-5, BS 1881-105

The Flow Table test is used for determining the consistency and workability of fesh concrete.
The conical mold for casting the flow specimen and the caliper for measuring the diameter of the mortar after it has been spread on the flow table.

Comprises:
The apparatus consists of a double steel table, the upper table measuring 700x700 mm and hinged at one side to the lower table.

The top table is inscribed and all parts are protected against corrosion.
The stainless steel cone has a top of 130 mm dia., base of 200 mm dia., and higheat of 200 mm. Supplied complete with wooden tamping rod.

CN 0112
Flow table



Pocket Penetrometer

Standards: ASTM C403, AASHTO T197

The Pocket Penetrometer is designed for determination of setting time of fresh concrete for field and laboratory use.

Stainless steel plunger 32.3 mm^2 (1/20 $inch^2$) area; plunger graduated 0-5 MPa.

CN 0113
Pocket Penetrometer

Setting-time by Concrete Penetrometer

Standards: ASTM C403, AASHTO T197

The Concrete Penetrometer is used for determination of setting time of the mortar fraction of fresh concrete.

Comprises:
The Concrete Penetrometer consists of a spring loading device which is graduated from 2 to 150 lbs, Set of stainless steel needle points of 650, 325, 160, 65, 32, and 16 mm² area.

CN 0114
Concrete Pentrometer complete

Spares:
CN 0115
Set of needle Points

V-Funnel Apparatus

The V-Funnel apparatus is used to evaluate the segregation resistance of freshly mixed self compacting concrete by observing the flowing speed due to the difference of samples remaining period in the funnel.

Comprises:
The test set consists of a stainless steel funnel placed vertically on a supporting stand.
The discharge orifice is equipped with a lid, which can be momentarily opened.

CN 0116
V-Funnel apparatus complete

U Shape Box Apparatus

The U Shape Box is used to determine the confined flowability and the capacity of SCC concrete to flow within confined spaces.

Comprises:
The Box is made of galvanized steel frame consisting of four 10 mm diameter and three 13 mm diameter bars.

CN 0117
U Shape Box apparatus complete

L Shape Box

The L Shape Box is used for evaluation of self compactability (confined flowability) of freshly mixed self compacting concrete.

The box gives the opportunity to evaluate different properties, such as filling ability, passing ability and resistance to segregation.

CN 0118
L Shape Box apparatus complete

Compacting Factor Apparatus

Standards: BS 1881-103, BS 5075

The Apparatus enables a check to be made on the weight of concrete when it is falls from fixed heights into a cylindrical container of standard capacity.

Comprises:
The Apparatus consists of two conical hoppers each with a hinged trap with quick release mechanism to allow free flow of the concrete sample.
A cylindrical mould is fitted beneath the hoppers.

CN 0119
Compacting Factor Apparatus

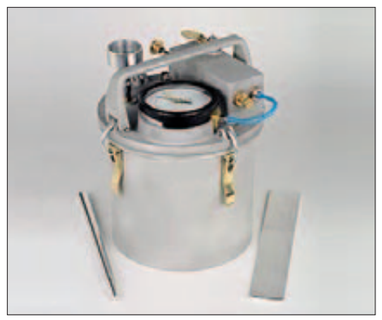
Air Entrainment Meter

Standards: EN 12350–7, ASTM C231, AASHTO T152

The Air Entrainment Meter is used to determine air content of fresh concrete. The meter measures up to 22% entrained air with an accuracy of ±0.25% at full scale.
It is appropriate for aggregates size of maximum 50mm.

Comprises:
It consists of a flanged 7 liter capacity cylindrical vessel and cover assembly incorporating a pressure gauge air pump and valves.
The instrument can be calibrated and it is supplied complete with straight edge and tamping rod.

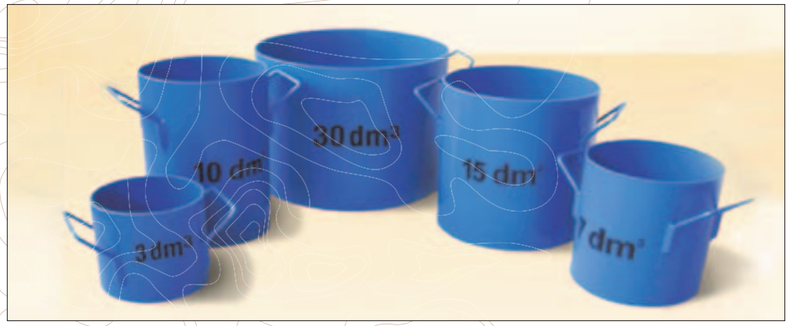
CN 0120
Air Entrainment Meter, Short Type
CN 0121
Air Entrainment Meter, Long Type



Bulk Density Measures

Standards: BS 812, EN 1097-3, 12350-6, ASTM C29, C138

The Bulk Density Measures is used to determine the loose bulk density and voids of Compacted Fresh Concrete. Manufactured from heavy gauge steel these bulk density measures comply with the requirements of either BS/EN or ASTM C138.
All measures has a carrying handles as per the required standard.



CN 0122
Bulk Density 3 ltr
CN 0123
Bulk Density 7 ltr
CN 0124
Bulk Density 10 ltr
CN 0125
Bulk Density 15 ltr
CN 0126
Bulk Density 20 ltr
CN 0127
Bulk Density 30 ltr

Density of Hard Concrete, Specific Gravity Frame

Standards: EN 12390-7, 1097-6, BS 1881:114

The Apparatus is used for specific gravity determination of fresh and hardened concrete.

Comprises:
A purpose built robust frame designed to support the electronic balance. The lower part of the frame incorporates a moving platform, which carries the water tank allowing the test specimens to be weighed in both air and water.

CN 0128
Specific Gravity Frame supplied complete with water tank, Buoyancy Balance, Cradle and suspension hook
Spares:
CN 0129
Cradle and suspension hook
CN 0130
Water Tank
CN 0131
Buoyancy Balance, 15 kg x 0.5 g

Vibrating Poker

Standards: EN 12390–2, 12350-6, -7, ASTM C31, C192, AASHTO T 23, T126

The Vibrating Poker is 25mm Tip, 250mm long ideal for the internal compaction of concrete specimens and a good alternative to traditional tamping bar especially when there are large numbers of specimens to be compacted.

CN 0132
Vibrating Poker complete

Melting Pot

Standards: EN 12390-7, 1097-6, BS 1881:114

The Melting Pot is used for melting capping compound (sulphur).
Comprises:
The apparatus consists of a aliminium container in a well-lagged steel jacket, cover and thermostatic control heating system to keep the temperature constant.
Specify Temp:
- 60° to 250°C, 100° to 320°C
- 60° to 450°C, 150° to 550°C

CN 0133
Melting Pot 1/2 litre
CN 0134
Melting Pot 1 litre
CN 0135
Melting Pot 2.5 litre
CN 0136
Melting Pot 4.5 litre
CN 0137
Melting Pot 9 litres

Cylinder Capping Frame

Standards: ASTM C617, EN 12390-3 AASHTO T23

The Cylinder Capping Frame is used to assure plane end surfaces perpendicular to the axis of the cylinder during the capping.
Built to last the frame comprising vertical supports mounted on a steel base.which can be disassembles for easy machining.

SN 0138
Cylinder Capping Frame
SN 0139
Cylinder Specimens, 75mm
SN 0140
Cylinder Specimens, 100mm
SN 0141
Cylinder Specimens, 150mm

SN 0142
Flake Capping Compound, 22 kg bag

Planetary Concrete Pan Mixer

Standards: BS 1377:2, ENV 1997-2, ASTM D4318, AASHTO T89

The Planetary Concrete Pan Mixer is efficient for mixing concrete samples for laboratory.

It is designed to give efficient mixing of both dry and wet materials, It Mixture with vertical axis. Reduction gear epicyclical. Manual discharge mouth, on the bottom.

Manual charge of raw material. Inertial counter-rotating satellite. Axle with idle wheels and rudder bar. The Cylinder capacity can be either 130, 220 or 300 Litres and the Yeld for mixture is 220 litres.
The Tank ring-shaped made by plate with big thickness. The mixer-has 3 shovel, external and internal scraper plus satellite inertial rotating arm.

The mixer head lifts clear to provide maximum access to the pan and holds the mixing blades at a constant depth during the mixing operation. The blades can be adjusted to suit the different types and volume of materials to be mixed.

CN 0143
Planetary Concrete Pan Mixer, 130 lt

CN 0144
Planetary Concrete Pan Mixer, 220 lt

CN 0145
Planetary Concrete Pan Mixer, 300 lt

J-Ring Apparatus

Standards: ASTM C 1621/C 1621M-06

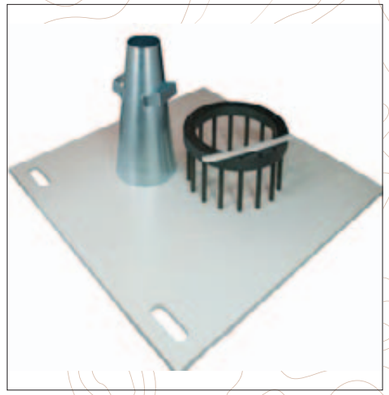
The J-Ring test, in conjunction with the Slump-Flow test, is one way to determine the passing ability of SCC, defined as the ability of the concrete to flow under its own weight to completely fill all spaces within the formwork.
The J Ring Test Set includes the J-Ring assembly, Modified Slump Cone, high-density polyethylene Strike-Off Bar and a plastic Base Plate with convenient cut-out carrying handles.

CN 0146
J Ring Test Set complete

CN 0147
J Ring

CN 0148
Slump Cone

CN 0149
Strike-Off Barone



Pull Off Strength Apparatus

Standards: ASTM C4541, ACI 503-30, BS 1881-207

The Pull-off Tester determines strength of concrete overlay adhesion and the strength of applied coatings, such as plastics, mortars, plasters, bituminous coats.

The Pull-off Tester tests at any measuring point, without requiring specimen preparation.
It has a crank drive, with adjustable legs optimize measurements for the specific test situation.

Comprises:
digital force gauge with lbf, PSI, kN and N/mm2 selectable display units, 50 mm diameter test disc, tensile draw bolt, carrying case and instruction manual.

CN 0150
Pull off Strength Apparatus
CN 0151
50mm Test Disks, set of 10
CN 0152
Steel Replacement Draw Bolt

Pan Concrete Mixer

The Pan Concrete Mixer is efficient for mixing quality concrete.
Pan type mixer is suitable for the mixing concrete in the laboratory.
It is designed to give efficient mixing of both dry and wet materials.
The total effective capacity of the mixer is 56 ltr.

Comprises:
The mixer head lifts clear to provide maximum access to the pan and holds the mixing blades at a constant depth during the mixing operation.
The blades can be adjusted to suit the different types and volume of materials to be mixed.

CN 0153
Pan Concrete Mixer

Drum Concrete Mixer

The Drum Concrete Mixer is used for efficient mixing of concrete.
The 125 ltr capacity Heavyduty mixer is equipped with rubber wheels which provide high portability.

CN 0154
Drum Concrete Mixer, 125lt
CN 0155
Drum Concrete Mixer, 170lt

CN 0156
Drum Concrete Mixer, 350lt

CN 0157
Drum Concrete Mixer, 425lt

Concrete Cube Moulds

Standards: EN 12390-1-2, ASTM C39, 192, AASHTO T23, T126

The Cast iron, hard plastic or steel cube moulds are manufactured in accordance to dimensions and tolerances stated in the related standards.

Two part or Four part with clamp attached base plate cast ironand steel moulds are designed to be durable, resistant and easy to clean.

Cast Iron Cube Moulds:

CN 0158
Cube moulds 100 mm,4 Part with Clamp base plate
CN 0159
Cube moulds 150 mm,4 Part with Clamp base plate
CN 0160
Cube moulds 200 mm,4 Part with Clamp base plate
CN 0161
Cube moulds 100 mm,2 Part with Clamp base plate
CN 0162
Cube moulds 150 mm,2 Part with Clamp base plate
CN 0163
Cube moulds 200 mm,2 Part with Clamp base plate

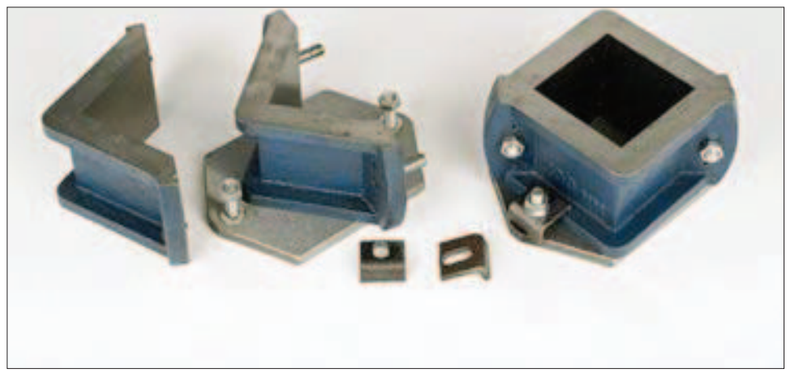
CN 0164
Steel Cube moulds 100 mm, with Clamp base plate
CN 0165
Steel Cube moulds 150 mm, with Clamp base plate
CN 0166
Steel Cube moulds 200 mm, with Clamp base plate

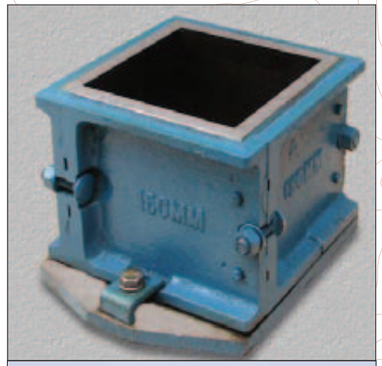
Plastic Cube Moulds:

CN 0167
Plastic Cube moulds 100 mm
CN 0168
Plastic Cube moulds 150 mm
CN 0169
Plastic Cube moulds 200 mm

Plastic Cube Moulds with handle:

CN 0170
Plastic Cube moulds 100 mm with handle
CN 0171
Plastic Cube moulds 150 mm with handle
CN 0172
Plastic Cube moulds 200 mm with handle





Concrete Cylinder Moulds

Standards: EN 12390-1-2, ASTM C39, 192

The Cast Iron Cylinder Moulds are manufactured in accordance to dimensions and tolerances stated in the related standards.

Cast Iron Cube Moulds:

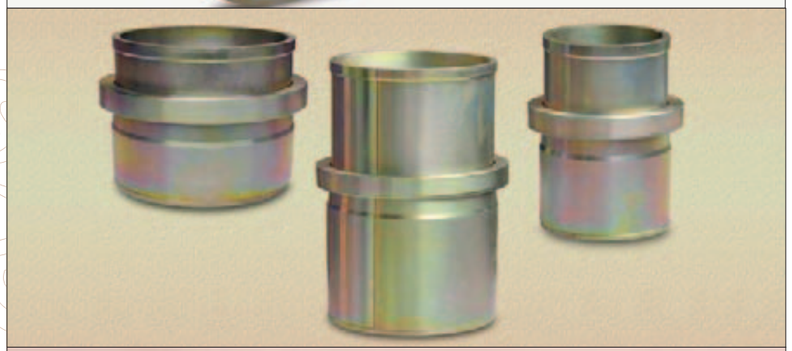
CN 0173
Cast Iron Cylinder Moulds, Split type 100x200 mm
CN 0174
Cast Iron Cylinder Moulds, Split type 150x150mm
CN 0175
Cast Iron Cylinder Moulds, Split Type 150x300mm

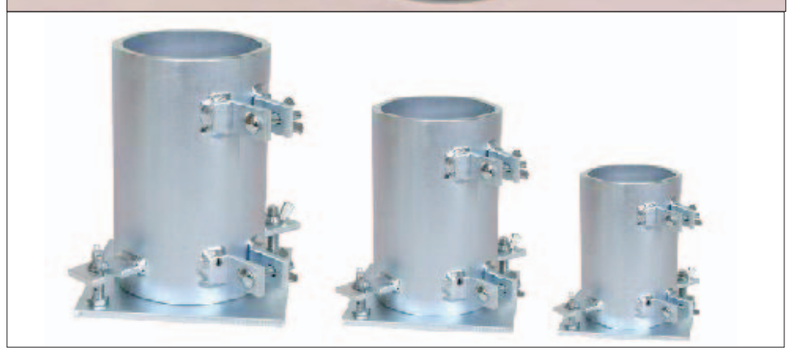
CN 0176
Cast Iron Cylinder Moulds, Ring Type 100x200 mm
CN 0177
Cast Iron Cylinder Moulds, Ring Type 150x150mm
CN 0178
Cast Iron Cylinder Moulds, Ring Type 150x300mm

The Plastic Cylinder Moulds are manufactured in accordance to dimensions and tolerances stated in the related standards.

Plastic Cube Moulds:

CN 0179
Plastic Cylinder Moulds 100x200 mm
CN 0180
Plastic Cylinder Moulds 150x150mm
CN 0181
Plastic Cylinder Moulds 150x300mm



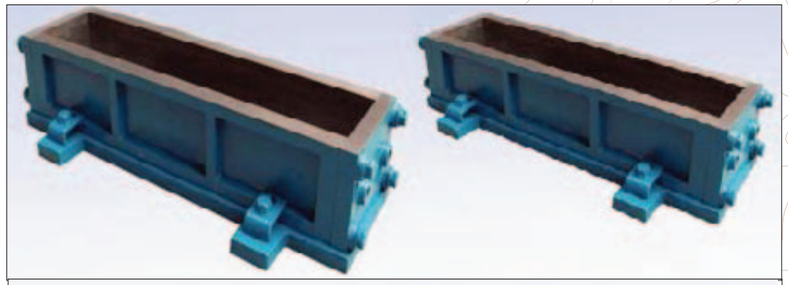


Concrete Beam Moulds

Standards: EN 12390-1-2, ASTM C39, 192, AASHTO T23, T126

Steel beam moulds are manufactured in accordance to dimensions and tolerances stated in the related standards. Two part and clamp attached base plate steel moulds are designed to be durable, resistant and easy to clean.
We also offer Heavy Duty Plastic beam moulds which are much lighter and build to last long time.

CN 0182
Beam mould 100x100x500 mm
CN 0183
Beam mould 150x150x600 mm
CN 0184
Beam mould 150x150x750 mm
CN 0185
Pastic Beam mould 100x100x500 mm
CN 0186
Plastic Beam mould 150x150x600 mm
CN 0187
Plastic Beam mould 150x150x750 mm



Curing Tank

Standards: EN 12390-1-2, ASTM C39, 192

The Curing Tank is designed for curing concrete cubes, beams and cylinders. The temperature can be set and maintained to the required value by an electric resistance incorporating a thermo regulator which maintains set temperature between ambient and 40°C with ±2°C accuracy.
The tank is also supplied with a submersible circulator pump to assure good temperature uniformity.

CN 0188
Small Curing Tank complete with all accessories
CN 0189
Large Curing Tank complete with all accessories
CN 0190
Set of Racks for Small Curing tank

CN 0191
Set of Racks for Large Curing tank
CN 0192
Recirculating Pump and heater

Vibrating Table

Standards: EN 12390–2

The Vibrating Table is a compact unit providing controlled vibro-compaction with fixed amplitude in the laboratory using cube or cylinder moulding equipment.
Comprises:
Vibrating tables consists of vibrating motor,control unit and clamping assembly. The table is available in two alternative sizes, 610 x 380 mm and 1260 x 620 mm. Small table accepts 4, large table accepts 8 cube, cylinder moulds or beam moulds by using clamping assembly.

CN 0193
Large Vibrating Table 1260 x 620 mm

CN 0194
Small Vibrating Table 610 x 380 mm

Concrete Impermeability Apparatus

Standards: EN 12390-8

The Concrete Impermeability Apparatus is used for the determining of the depth of penetration of water to hardened concrete specimens under pressure.
3 and 6 specimen capacity models are available.
The system can test 150x150x150 mm, 200x200x200 mm cube or 150x300mm cylinder specimens.
Pressure to the sample, up to 10 bar with 0,2 bar precision is generated by way of compressed air applied to the integral water tank and controlled by a pressure regulator; with a pressure gauge. The penetration of water is measured through the burettes supplied complete with the system.
The system comprises impermeability gaskets for every cell.
The apparatus has to be fitted with the suitable air compressor with maximum working pressure of 10 bar.

CN 0195
Impermeability Three Place Model Complete

CN 0196
Impermeability Six Place Model Complete

Crack Detection Microscope

The Crack Detection Microscope is a precision apparatus, used for measuring cracks in concrete.
It has its own adjustable light source for darkened conditions.
The image is focused by turning a knurled knob on the side and the eyepiece scale can be rotated through 360 degrees to align with the crack under examination.
The 4mm range of measurement is divided into 0.02mm divisions.

CN 0197
Crack Detection Microscope complete

Concrete Ultrasonic Non-destructive Apparatus

Standards: BS 1881-203, EN 12504-4;ASTM C597

An essential tool for investigating the structural integrity of a wide range of materials. This new generation Concrete Ultrasonic can be used in the laboratory or on site to investigate uniformity; cavities, cracks, fire/frost damage, delamination, deterioration and strength.
It has memory storage of up to 100 sets of readings and built in RS232 serial port for download of data. Supplied with a simple software download utility kit and does not require reference bar as calibration is done by 'zeroing'. It can calculate and display additional parameters – velocity, path length and Young's Modulus. It can be set to any pulse repetition frequency from 1 to 100 and has pulse delay mode which allows the user to take readings at specified intervals from 1 per second up to 99 hours.

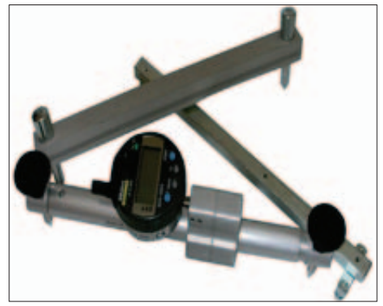
CN 0198
Concrete Ultrasonic Non-destructive Apparatus

Mechanical Strain Gauge

Standards: BS 1881-206

The mechanical strain gauge allows strain measurement to be made at different parts of a structure using a single instrument. comes with a digital gauge.

CN 0199
StrainGauge 100mm
CN 0200
StrainGauge 200mm



Concrete Test Hammer

Standards: EN 12504-2, ASTM C805, BS 1881

The Concrete Test Hammer is the traditional instrument used for the non-destructive testing of hardened concrete.
This easy-to-use instrument provides a quick and simple test for obtaining an immediate indication of concrete strength in various parts of a structure.
The verifiable strength is between 10 and 70 N/mm²

The test anvil on the other hand is used to verify test hammer calibration. the calibration must be verified before and after a test sequence.

CN 0201
Concrete Test Hammer, Normal Type complete with carrying case,PSI curve and carborundum stone
CN 0202
Testing Anvil with surface hardness > 62 HRC

Our latest generation concrete test hammer is made of the best components, distinctive ergonomic and all this brought to the development of the special type of concrete hammers with higher degree of reliability as far as correlation curves are concerned, obtaining the new SonReb method.

To develop new curves, 50 cubic samples (200x200mm) of twenty distinct classes of concrete have been tested.

The verifiable strength is between 10 and 120 N/mm2

Comprises:

- Instruction manual with MpA
- PSI curves
- Notepad to record index values
- Pencil
- Abrasive grindstone complete with case
- Position template (length 25 mm)
- Position template (length 30 mm)
- Phenolphthalein atomizer
- Phenolphthalein label precautions
- Padded case with shoulder-strap
- Notepad for recording scale values
- Calibration and QC certificate
- Transport safety cap

CN 0203
Concrete Test Hammer, Special Type complete with all accessories

Digital Concrete Test Hammer

Standards: EN 12504-2, ASTM C805, BS 1881

Our Digital Concrete Test Hammer is full of Precision and Reliability of the latest generation, the distinctive ergonomic design, the quality of the material used.

Light weighted and as easy to handle as a mechanical sclerometer, the Digital Concrete Hammer is an essential tool for the field experts.
By means of a built-in operating system menu, the Digital Hammer can perform simple concrete tests while constantly recording the collected data.

Testing parameters settings according to the required standards.
A dedicated data card, which enables to acquire, store and analyze the collected data, allows to download them on to a PC to be further processed.

Comprises:
- Model: Digital Concrete Test Hammer, type N
- Battery life: 60 hours
- Impact energy: 2,207 Nm
- Operating temperature -10 °C +65 °C
- Measurement range 10-120 N/mm2
- Dimensions: 330x80x100 mm
- Internal memory 20,000 index values
- LCD graphic display 64x124
- Controls: icons keyboard
- Interface: RS232
- Power supply, 5 rechargeable batteries LR6 1.5V

CN 0204
Digital Concrete Test Hammer complete with all accessories

Micro Covermeter

Standards: BS1881 part 204

The Micro Covermeter is developed model with newly designed probe believed to incorporate the most accurate depth and bar size determination routines available.

Combined with extremely good resolution of multiple bars, sets the unit apart from others and sets the benchmark for covermeter surveying.

CN 0205
Micro Covermeter complete

Compression Machine

Standards: EN 12390-3,4,5,6; EN 12504-1, 1354, 1521, 13161, 1338, 1340, 196, 772-1, -6, 13286-41, BS 1881 3892-3, 187, 6073-1, 6717 ASTM C39

Our range of 2000 kN and 3000KN capacity Compression Machines has been designed to meet the need for reliable and consistent testing of concrete samples.
The machines feature both model the semi automatic and the Full automatic models.

The Full automatic models comes with complete automatic test cycle, a closed loop digital readout unit. Once the specimen parameters have been introduced, it is sufficient to press the START button to complete the test.

The Full Automatic Compression Machines consist of their main parts: Frame, power pack and data acquisition control system.

CN 0206
Full Automatic Compression machine, 2000 KN
CN 0207
Full Automatic Compression machine, 3000 KN

Accessories:

CN 0208
Distance Piece 20 mm
CN 0209
Distance Piece 30 mm
CN 0210
Distance Piece 50mm
CN 0211
Distance Piece 90mm
CN 0212
Distance Piece 100mm

Compression Machine

Standards: EN 12390-3,4,5,6; EN 12504-1, 1354, 1521, 13161, 1338, 1340, 196, 772-1, -6, 13286-41, BS 1881 3892-3, 187, 6073-1, 6717 ASTM C39

The dual stage power pack which is controlled by the control system which is designed to supply the required oil to the frame.
Very silent power pack can load a specimen between 1 kN/ sec to 20 kN/sec. On the dual stage pump high delivery low pressure pump is used for rapid approach and low delivery high pressure radial piston pump is used for test execution.
On all power packs maximum pressure valve is used to avoid machine overloading.

LCD graphics data acquisition and controls system is designed to control the machine and processing of data from load cells or pressure transducers installed on the compression machine frame.

The easy to read LCD graphic display and touch-button data pad keys make the unit quick and straight forward to operate. All interactions with the measuring system are via the front control panel by using simple menu-driven procedures.

Dedicated software package is available for further online data processing, database management and certificate printing.

Compression Machine

Standards: EN 12390-3,4,5,6; EN 12504-1, 1354, 1521, 13161, 1338, 1340, 196, 772-1, -6, 13286-41, BS 1881 3892-3, 187, 6073-1, 6717 ASTM C39

The Semi Automatic range of Compression Testing Machine is designed to meet most needs for reliable and consistent testing.

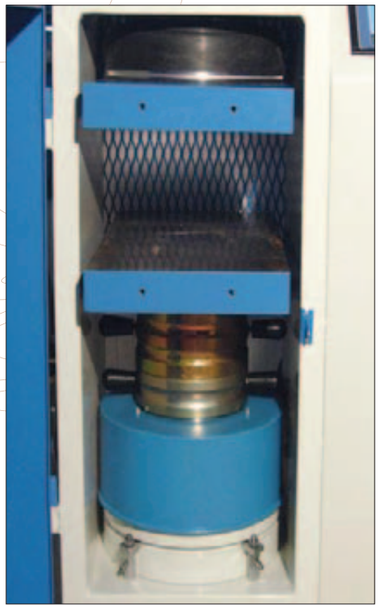
The Display Unit is a microcontroller controlled device with advanced facilities for data capture, calculation and presentation.

CN 0213
Semi Automatic Compression machine, 2000 KN
CN 0214
Semi Automatic Compression machine, 3000 KN

Accessories:
Distance Pieces, See Page

Block Test Platens

Standards: EN772-1, BS 6073-1



The Block Test Platens 510mmx310mmx50mm are used for testing concrete blocks and other structural materials.

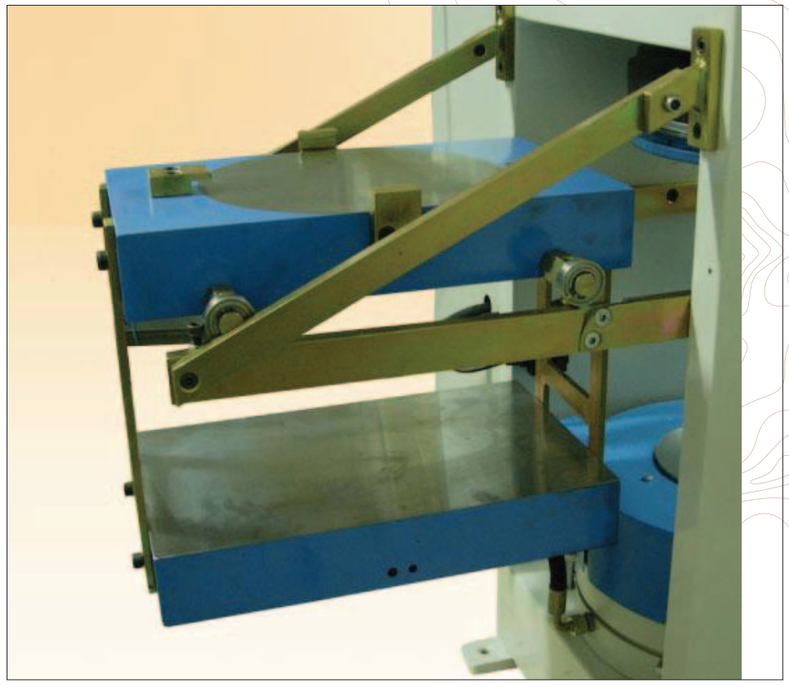
CN 0215
Block Test Platens

Block Test Platens Sliding Rail Assembly

Standards: EN 772-1, BS 6073-1

The Block Test Platens Sliding Rail Assembly 510mmx310mmx50mm allows the platens to be easily installed without removing the existing circular platens.

CM 0216
Block Test Platens Sliding Rail Assembly



Splitting Tensile Devise and Compressometer

Standards: EN 1338, EN 12390-6, ASTM C 496

The Splitting Tensile Devise for testing samples 320 mm long x 200mm wide and 40 mm to 130 mm thick. Specialy designed Splitting Jig that is used for Splitting Concrete Blocks, Cylindrical Speciments and Concrete Cubes of different sizes.

The Cylinder Splitting Jig for testing cylinders of 150 x 150 mm and 150 x 300 mm (diameter x length).

CM 0217
Block Splitting Jig

CM 0218
Cylinder Splitting Jig
CM 0219
Cubes Splitting Jig
CM 0220
Compressometer

Flexural Test Machine

EN 12390-5,6, 1338, 1340, ASTM C78, C293, C496

The Flexural Testing Machine range of 100 kN and 200 kN capacity have been designed for reliable and consistent testing of concrete beams, transverse test on kerbs and flagstones, indirect tensile tests on concrete and interlocking pavers.

The Flexural Machines feature the complete automatic test cycle with a closed loop digital readout.

Once the specimen parameter have been introduced, it is sufficient to press the START button to complete the test.

The Flexural Frame can be connected to any Geotechnical compression machine as a second frame.

CN 0221
Flexural Testing Machine, 100 kN capacity

CN 0222
Flexural Testing Machine, 200 kN capacity

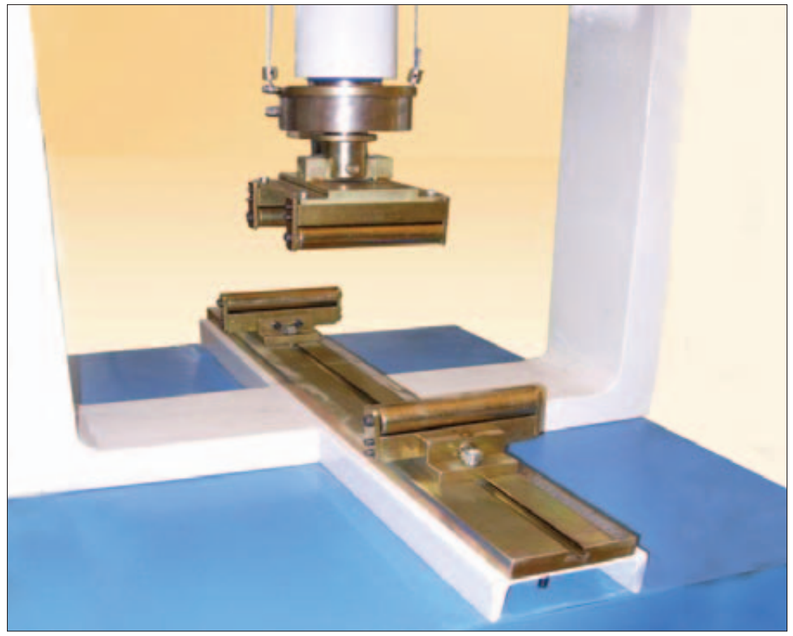
Comprises:

The Flexural machines consist of their main part frame, power pack and data acquisition & control system.

Each part has been designed to manufacture machines with a high degree of mechanical stability and complies with the suitable standard.

Compression Machine

Standards: EN 12390-3,4,5,6; EN 12504-1, 1354, 1521, 13161, 1338, 1340, 196, 772-1, -6, 13286-41, BS 1881 3892-3, 187, 6073-1, 6717 ASTM C39



The Flexural Test assembly on Concrete Beams is used for 3 or 4 point flexural tests on 100 or 150 mm concrete beams.
The distance of the lower bearers can be adjusted between 100mm and 800mm.
The distance between upper bearers can be set to 100mm or 150 mm.
During the 3 point Flexural testing one of the bearers can be removed and the other placed in the center.
The bearer dimensions are 40mm diameter x 160 mm length.

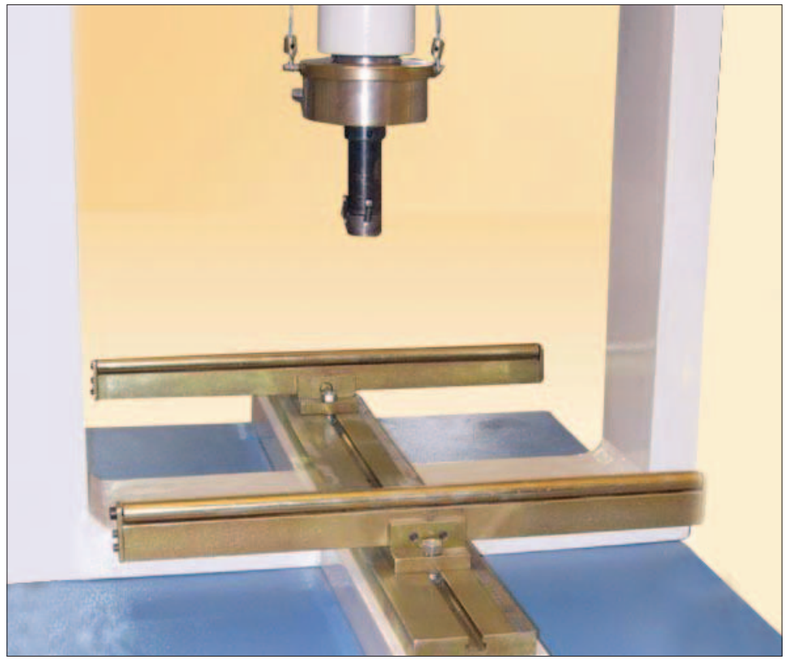
CN 0225
Bearers for concerete beams of 100x100x400-500 mm, 150x150x600-750 mm. Consist of two upper rollers and two lower rollers of. 40 dia. and 160 mm lenght. Complying to EN 12390-5 and ASTM C78

The Flexural Test assembly for Kerbs and Blocks consists of two lower bearers 20mm diameter x 600mm long and 40 mm diameter upper loading piston with ball seating assembly.

The distance between lower bearers can be adjusted from 100mm to 800mm.

CN 0223
Bearers for flexure test on flagstones and kerbs to EN 1339 and 1340. Consist of two lower roller of 20 mm dia. x 600 mm lenght and upper load point of 40 mm dia with ball seating

CN 0224
Bearers for flexure test on concrete blocks Consist of two lower roller and one upper roller of 20 mm dia. x 600 mm lenght

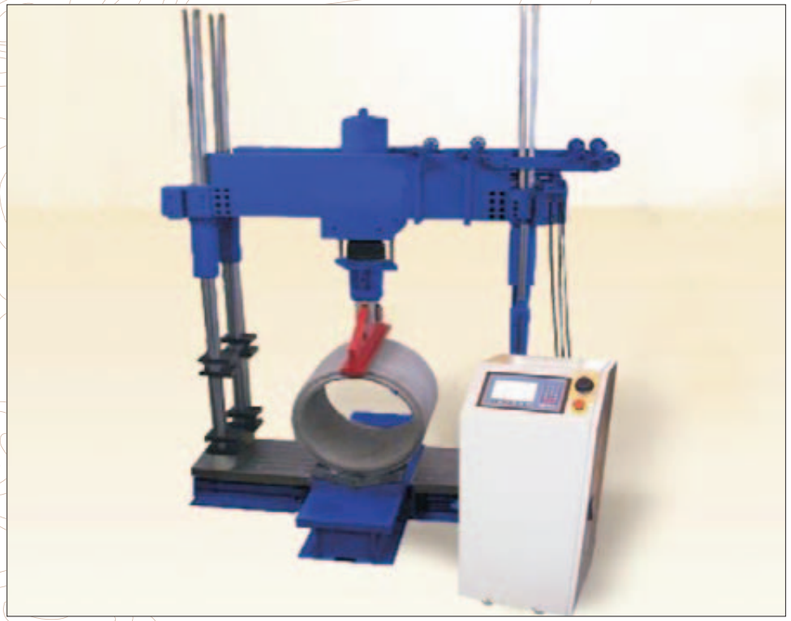


Pipe Testing Machine

Standards: EN 12390-5,6, 1338, 1340, ASTM C78, C293, C496

The Automatic Pipe Test Machine is a 1000KN static application for tensile, compression and bending tests of concrete pipes.
The machine can test pipes both verticaly and horizontaly each according to the installation and accessories used.
It can test large building pipes, joists, plates,sections of various shapes and sizes.

CN 0226
Automatic Pipe Test Machine



Compression and Tension Testing Machine

Standards: BS 1610, ASTM C-39, E4 AASHTO T-22, ASTM C78, C293, C496

The Compression and Tension Automatic Testing Machine has a range of 500 kN tension and 1000 kN compression capacity.
It is designed to meet the need for reliable and consistent testing of steel rebars and concrete samples for use both in the field and laboratory.

The machine consists of a very rigid frame with double-acting cylinder assembly to perform tension tests on steel rebars up to 22 mm dia., flat specimens up to 15mm thick and 50mm wide, compression tests on concrete cubes up to 150 mm and on cylinders up to 160x320 mm.
Its Heavy Duty, high degree of accuracy and low cost make this machine ideal for site testing and educational purposes.

CN 0227
Compression and Tension Testing Machine

Rapid Chloride Permeability

Standards: ASTM C1202, AASHTO T-277

It is often necessary to evaluate chloride permeability characteristics of concrete in bridges and other structures.

Now the electronic technology is available to evaluate slices of cores taken from such sources using a 6-hr. laboratory procedure.

By testing slices from laboratory cylinders, the method is also suitable for evaluation of materials and/or additives for mix design of HPC or other concretes.

Current flow with time is measured while a 4" (102mm) diameter, 2" (51mm) thick specimen slice is subjected to a regulated 60V DC potential across ends. The negative end is exposed to 3% sodium chloride solution, and the positive end to 0.3N sodium hydroxide solution. The Rapid Chloride Permeability test Instrument automates the integration of current relative to time to determine coulombs as a measure of chloride permeability.

Models are available to test four, or eight specimens simultaneously. Test voltage, test time, current for each specimen and coulombs for each specimen are continuously displayed. Printouts of the above data are automatically activated every 30 minutes or at a different user selectable rate. The printout can also be manually activated at any time by switch and are directed to the internal printer. Tests are automatically terminated at 360 minutes. Current range is 0-1 amp DC per core.

The Rapid Chloride Permeability Units have a wide range voltage supply capability of 30 to 60 volts DC. Instrument cabinets measure 19x17x7" (432x483x178mm), WxHxD.
Order the Test Cells separately, minimum of 4 needed. Vacuum Apparatus, required for either systems, includes vacuum pump, electronic vacuum gauge, water trap, desiccators, stand, clamps, filter paper, and vacuum hose.

CM 0228
Rapid Chloride Permeability Apparatus complete set 4 cell model
CM 0229
Rapid Chloride Permeability Apparatus complete set 8 cell model

Accessories:
CM 0230
Chloride Permeability Vacuum complete set
CM 0231
Rapid Chloride Permeability Test Cell, Pair

aggregate equipment

production

Aggregate is a component of a composite material used to resist compressive stress and provide bulk to the composite material. For efficient filling, aggregate should be much smaller than the finished item, but have a wide variety of sizes.

It is vastly used in most combination of construction material such as concrete and asphalt technology to which aggregates may either be specified or designed to suit a particular engineering requirement while not suiting another.

The properties of aggregates can vary and hence affect the final construction material. Therefore it is important to test the different parameters such as resistance to polishing, particle size, shape and texture, relative, bulk density, crushing value, impact value, organic impurities, compacted densities, specific gravity, soundness and abrasion resistance.

Flakiness Sieves

Standards: BS 812

Flakiness Sieves are used to determine particle size shape or geometrical characteristics of the aggregates.
Each sieve made from heavy gauge steel sheets in dimensions specified in the standards and coated with electrostatic paint.

Product Code	Slot Size
AG 0101	4,9 mm slot size
AG 0102	7.2 mm slot size
AG 0103	10.2 mm slot size
AG 0104	14.4 mm slot size
AG 0105	19.7 mm slot size
AG 0106	26.3 mm slot size
AG 0107	33.9 mm slot size

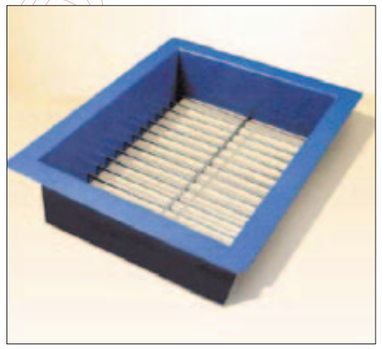
Grid Sieves

Standards: EN 933-1, EN 933-3

Grid Sieves are used to determine the flakiness index of the aggregates.

Made of electrostatic steel frame and 5 mm diameter stainless steel parallel bars.

Product Code	Aperture (mm)
AG 0108	2,5 mm
AG 0109	3.15 mm
AG 0110	4 mm
AG 0111	5 mm
AG 0112	6.30 mm
AG 0113	8 mm
AG 0114	10 mm
AG 0115	12.5 mm
AG 0116	16 mm
AG 0117	20 mm
AG 0118	25 mm
AG 0119	31.5 mm
AG 0120	40 mm



Flakiness Gauge

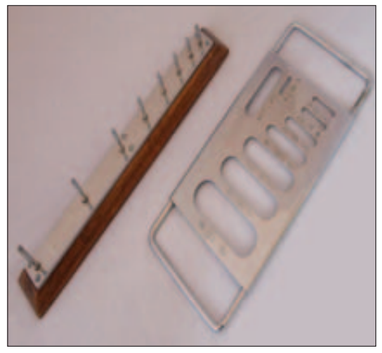
Standards: BS 812

Flakiness Gauge is used to determine if aggregate particles are to be considered flaky, i.e. their thickness is less than 0.6 of their nominal size.

AG 0121
Flakiness Gauge

Length Gauge classifies aggregate elongation by measuring the length of individual particles.

Aggregate particles are considered elongated when their length is more than 1.8 of their nominal size.
Length Gauge test is not applicable to material retained on 63.0 mm BS test sieve.
AG 0122
Length Gauge



Shape Index Gauge

Standards: EN 933-4

Shape Index Gauge is used to determine the shape factor of individual aggregates by comparing the ration of length to width.

AG 0123
Shape Index Gauge

Particle Density (specific gravity) and Water Absorption Sand Absorption Cone and Tamping Rod

Standards: EN 1097-6, 12697-6, BS 812, ASTM C127-C128, AASHTO T85, T84

The Sand Absorption Cone and Tamping Rod are used to determine the specific gravity and absorption of fine aggregates smaller than 20 mm.

The Apparatus is manufactured from plated steel for protection against corrosion.

AG 0124
Sand Absorption Cone and Tamping Rod complete set

Spares:

AG 0125
Sand Absorption Cone
AG 0126
Tamping Rod

Specific Gravity Frame and Buoyancy Balance

Standards: BS 812, ASTM C127, AASHTO T85 BS 812, ASTM C127 AASHTO T85 EN 1097-6, 12697-6, EN 12390-7
EN 1097-6, 12697-6, EN 12390-7

This method is used to determine the aggregates specific gravity.
The robust frame is designed to support the buoyancy balance.

The lower part of the frame incorporates a moving platform, which carries the water tank allowing the test specimens to be weighed in both air and water.

AG 0127
Specific Gravity Frame supplied complete with water tank, Buoyancy Balance, Wire Basket and suspension hook

Spares:
AG 0128
Wire Basket and suspension hook
AG 0129
Water Tank
AG 0130
Buoyancy Balance, 6000 g x 0.1 g

Bulk Density Measures

Standards: BS 812-2, 3797, EN 1097-3, 12350-6, ASTM C138, C29

The Bulk Density Measures are used to determine the loose bulk density and voids of aggregates.

They are made from heavy steel gauge and specially coated against corrosion.

Product Code	Capacity Model
AG 0131	3 ltr
AG 0132	7 ltr
AG 0133	10 ltr
AG 0134	15 ltr
AG 0135	20 ltr
AG 0136	30 ltr

Chloride and Sulphate Content, Instant Test Strips

Quantab chloride titrators can be used for estimating the chloride content of aqueous solutions.They are suitable for site testing and quality control of aggregates requiring less than 30 minutes to obtain a result.

AG 0137
Quantab Chloride Titrator Strips.Type 1175 titration range 0.005% to 0.1% (30 to 600 ppm) NaCl. Pack of 50.
AG 0138
Quantab Chloride Titrator Strips. Type 1176 titration range 0.05% to 1% (300 to 6000 ppm) NaCl. Pack of 40.

A qualitative or semi-quantitative test is recommended for determining sulphate ions in aqueous solutions. Sulphate test strips are convenient measuring devices for preliminary assessment of sulphate content.

AG 0139
Sulphate Test Strips detection range 200 to 900 mg/l. Pack of 100.

Organic Impurities in Fine Aggregate

If aggregate contains organic impurities it may not be suitable for inclusion in concrete.

Organic impurities, usually tannic acid and its derivatives, may interfere with the chemical reactions of hydration.
Impurities are more likely to be found in fine (sand) aggregate.

AG 0140
Organic Impurities complete Test Set, containing Graduated Bottle, Reference Color Comparison Chart and Sodium Hydroxide solution
AG 0141
Graduated Bottle, 300 ml
AG 0142
Reference Color Comparison Chart
AG 0143
Sodium Hydroxide Solution

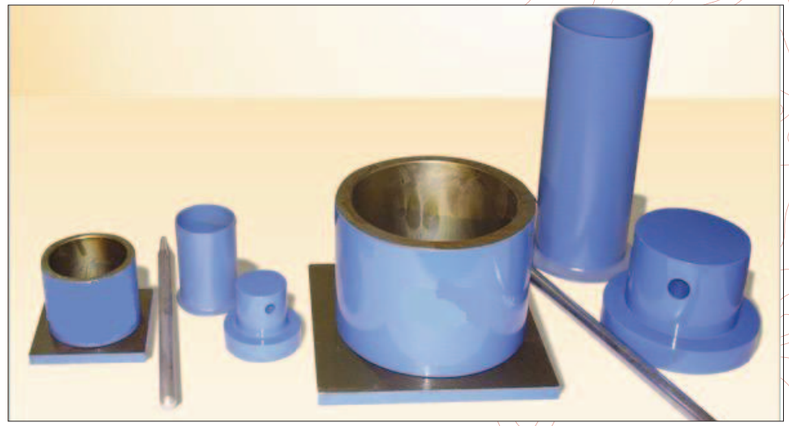
Aggregate Crushing Value and Ten Percent Fines Value (ACV / TFV)

Standards: 812-110, 111

Aggregate crushing Value provides a relative measure of the resistance of an aggregate to crushing under a gradually applied compressive load.

Ten Percent Fines Value used for testing aggregate smaller than 10 mm.

Comprises:
150 mm or 75mm diameter steel cylinder, plunger, base plate, tamping rod and metal measure. All parts are powder coated or galvanized.



Product Code	Description
AG 0144	Aggregate Crushing Value Apparatus 150 mm dia.
AG 0145	Metal Measure 115 mm diameter x 180 mm deep
For Aggregates Smaller Than 10 mm	
AG 0146	Aggregate Crushing Value Apparatus,75 mm dia.
AG 0147	Metal Measure 57 mm diameter x 90 mm deep.
Accessories:	
AG 0148	Tamping Rod 8 mm diameter x 300 mm long

Aggregate Impact Value (AIV)

Standards: 812-112

The Aggregate Impact Value machine has been developed for determining the impact value of aggregates.

Manufactured from plated steel against corrosion, a counter fitted to the machine automatically records the number of blows delivered to the sample.

The AIV is supplied complete with 75 mm diameter x 50 mm deep cylindrical measure and steel tamping rod.

AG 0149
Aggregate Impact Value apparatus complete

Los Angeles Abrasion Machine

Standards: EN 1097-2, ASTM C131, C535

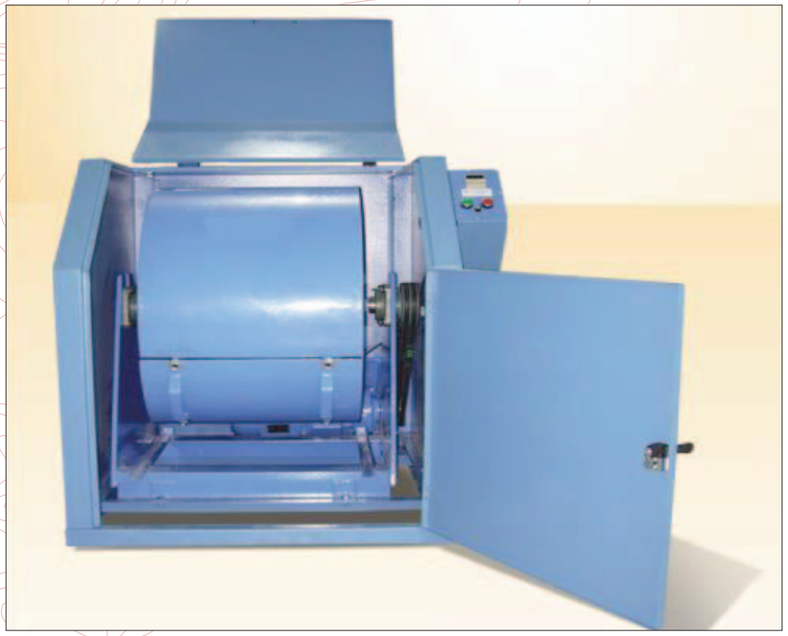
Los Angeles Abrasion Machine is used for determination of aggregates resistance to fragmentation.

The machine consists of an electronic control unit and a rolled steel drum having an inside diameter of 711 mm and internal length 508 mm.

The drum is rotated at a speed of between 31 and 33 r.p.m.
The internal shelf is provided with the machine is conforming to ASTM and EN standards.

The machine is equipped with automatic counter, which allows stopping when the preset number of revolutions is completed.
There is a steel tray supplied with machine for easy discharge of specimen.

Safety Cabinet model are installed with electronic control unit and electric safety device which automatically stops the rotation of the drum when the door is opened, conforming to CE directives.



AG 0150
Los Angeles Abrasion Machine 220 V, 50–60 Hz
AG 0151
Los Angeles Abrasion Machine with safety cabinet, 220 V, 50–60 Hz

AG 0152
Set of 11 abrasive charges conforming to EN
AG 0153
Set of 12 abrasive charges conforming to ASTM

Abrasion Testing Machine

Standards: EN 1341, 1342, 1343

Abrasion Testing Machine is designed to determine the resistance to abrasion and wear of natural stones and concrete products.

The abrasion wheel is 70 mm thick and rotates with speed of 75 r.p.m.
The machine is equipped with digital counter which stops the rotation at the preset number of revolutions.

AG 0154
Abrasion Testing Machine

Digital Point Load Apparatus

Standards: EN 1997-2, ASTM D-5731

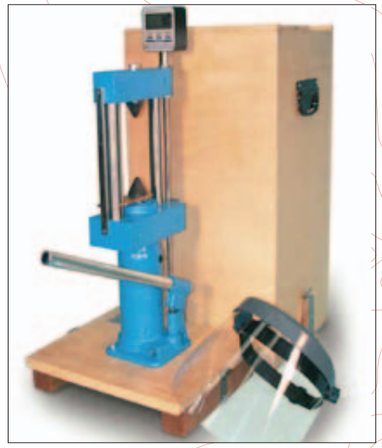
The point load tester is used to measure rock strength in the field or laboratory.

A load frame, hydraulic jack and digital display are mounted on the base of a carrying case.

With this point load tester, samples up to 4” (101.6mm) diameter can be tested on 2 conical points.

A graduated scale indicates distance between conical points and is also used to measure specimen diameter. Applied load is digitally displayed to 0.001kN; accuracy is ±1%; range is 0 to 56kN. Display shows maximum load and will also read in lb and tons.

AG 0155
Digital Point Load Apparatus



Nordic Abrasion Machine

Standards: EN 1097–9

The Nordic Abrasion Machine has been developed to test the resistance to abrasion/wear from studded tires.
Test is being performed on natural stones and aggregates between 11,2 mm and 16 mm, it consists of rotating aggregates in drum with steel abrasive balls and water.

The machine consists of an electronic control unit and a rolled stainless steel drum having an inside diameter of 206,5mm, internal length 335mm and thickness of 6mm. The drum is rotated at a speed of 90±3 r.p.m.
3 wings are installed inside of the drum to allow balls and aggregates to be mixed properly. The abrasion loss rate of aggregates is calculated after specified number of revolutions stated in the related standard.

AG 0156
Nordic Abrasion Machine

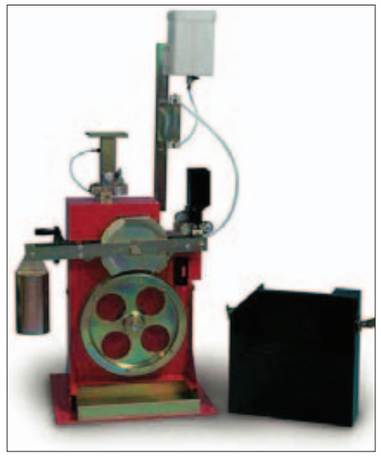
Accelerated Polishing Machine

Standards: EN 1097-8, EN 1341, 1342, 1343

The Accelerated Polishing Machine is used to measure the resistance of road stone to the polishing action of vehicle tires on a road surface.
The machine consists of road wheel rotating in the speed of between 315 and 325 r.p.m.

The machine is supplied complete with road wheel, side plate, rubber rings, abrasive feed mechanism, corn emery, flour emery, set of 4 specimen mould and 2 mould plates.

AG 0157
Accelerated Polishing Machine



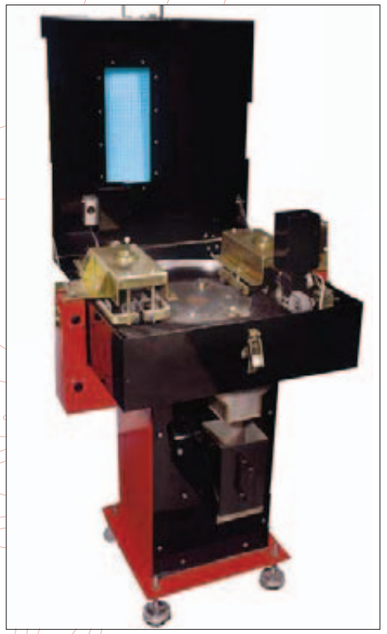
AAV Abrasion Machine

Standards: EN 1097-8, BS 812

The AAV Abrasion Machine provides a measure of the resistance of aggregate to surface wear by abrasion, it consists of a flat circular cast iron grinding lap 600 mm dia which rotates in a horizontal plane at a speed of 28/30 r.p.m.

The abrasive sand is fed across the surface of the specimen samples through a special funnel.
The machine is supplied complete with two specimen moulds, two trays, two flat plates, weights and clamps.

AG 0158
AAV Abrasion Machine



Micro-Deval Testing Machine

Standards: EN 1097-1

The Micro Deval Testing Machine used to determine the resistance of wear for 25-50mm size aggregates. The machine consists of a steel frame, four stainless steel cylinders, and 25kg of 10 mm diameter stainless steel spheres.

Fitted with an automatic digital counter that allows the machine to stop automatically at preset number of revolutions. Stainless steel Ø200 x 154 drums rotates at speed of 100 (±5) r.p.m.

AG 0159
Micro-Deval Testing Machine

Skid Resistance and Friction Tester (Skid Tester)

Standards: EN 1097-8, ASTM E103, BS 812:144

The Skid Tester is used for measuring the surface friction properties, it is suitable for both site and laboratory applications and for Polished Stone Value tests using curved specimens from accelerated polishing tests.
Supplied complete with additional scale for tests on polished stone value specimens and 6 rubber sliders for site usage.

AG 0160
Skid Resistance Tester complete with all accessories
AG 0161
Rubber Sliders for site usage
AG 0162
Claping device for tests on natural stones
AG 0163
Claping device for polish stone value tests
AG 0164
Metal base plate

High Capacity Screen Shaker

The High Capacity Screen Shaker is ideal for sizing large quantities of crushed stones, sand, gravel, slag, coal, coke, ores, pellets and similar materials.

The screen shaker has a capacity of about 30 kg of sample. For use with 457x660x75mm dimension screens.

AG 0165
High Capacity Screen Shaker
AG 0166
Set of screens

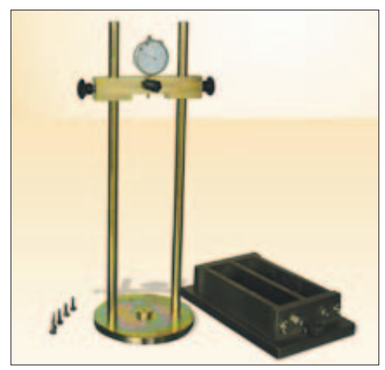
Shrinkage and Expansion of Aggregates

Standards: BS812-120, EN 1367-4

The scope of this test is the determination of the effect of aggregates on the drying shrinkage of concrete. The test is based on the testing of concretes of fixed mix proportions and aggregates of 20 mm max size.

AG 0167
Three gang Prism Mould for specimens 50 x 50 x 200 mm

Rest of the accessories are in the cement section



general equipment

production

Our general laboratory equipment are complementary equipment that are used in conjunction with our major equipment.

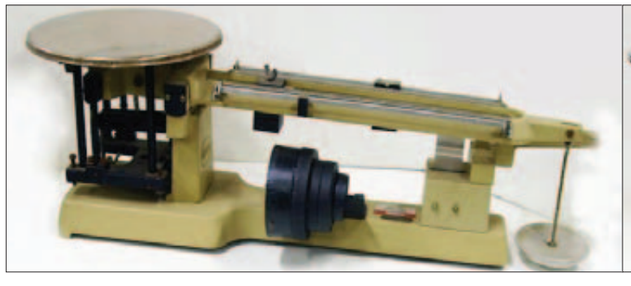
We supply an extensive inventory of general laboratory product of the best quality and value ranging from balances and scales, thermometers, laboratory ovens, muffle furnaces, vacuum pumps, air compresors, core drills, laboratory glassware, water baths, pans, bowls, dishes, jars, trowels, brushes, shovels, spatulas and general tools.

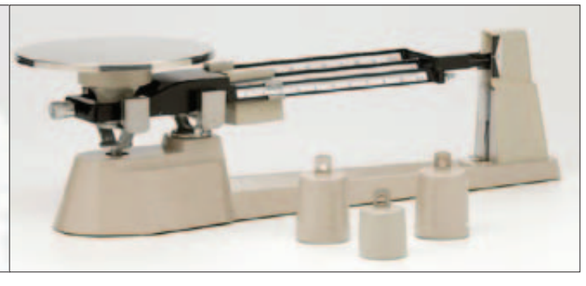
Laboratory Ballances and Scales

Our range of balances are designed for the lab but have the rugged features needed for materials testing. They include all metal chemical resistant die-cast housings. Compact and durable, these balances are the best choice for basic weighing and economy.

The tough durable ABS housing is designed to withstand field and laboratory environments, while being easy to clean and protected from accidental spills.

Electronic Digital Balances		
GN 0101	Digital Balance 250 g	0.0001 g resolution
GN 0102	Digital Balance 250 g	0.001 g resolution
GN 0103	Digital Balance 450 g	0.001 g resolution
GN 0104	Digital Balance 750 g	0.001 g resolution
GN 0105	Digital Balance 1500 g	0.01 g resolution
GN 0106	Digital Balance 2500 g	0.01 g resolution
GN 0107	Digital Balance 4500 g	0.01 g resolution
GN 0108	Digital Balance 6000 g	0.1 g resolution
GN 0109	Digital Balance 8000 g	0.1 g resolution
GN 0110	Digital Balance 10 kg	0.1 g resolution
GN 0111	Digital Balance 20 kg	0.1 g resolution
GN 0112	Digital Balance 20 kg	1 g resolution
GN 0113	Digital Balance 32 kg	1 g resolution
GN 0114	Digital Balance 30 kg	5 g resolution
GN 0115	Digital Balance 48 kg	2 g resolution
GN 0116	Digital Balance 60 kg	5 g resolution
GN 0117	Digital Balance 75 kg	1 g resolution
GN 0118	Digital Balance 75 kg	5 g resolution
GN 0119	Digital Balance 150 kg	10 g resolution
GN 0120	Digital Balance 300 kg	20 g resolution
Mechanical Scales		
GN 0121	Harvard Trip Balance	2000 g, 0.1 g readability
GN 0122	Triple Beam Balance	2610 g, 0.1 g readability
GN 0123	Dial-O-Gram Balance	310 g, 0.1 g readability
GN 0124	Heavy Duty Solution Balance	311 g, 0.01 g readability





Multi-Purpose Drying Ovens

Standards: EN 932-5, 1097-5, ASTM C 127- C136-D558, D559, D560, D698, D1557, D1559 BS 1377:1-1924:11

The Geotechnical Laboratory Ovens offer a range of highly efficient, reliable, cost effective units to suit most drying, warming and general laboratory applications.
The exterior is constructed from sheet steel finished in an easy clean powder coated paint. The interior chamber is made from mild steel coated with aluminium (CLAD) with a stainless steel chamber available as an option.

Fitted with fixed shelf runners and removable chrome plated wire grid shelves.
Heated by Incoloy sheathed elements positioned below the chamber floor for natural convection units and fitted around the fan on the back or side wall of the chamber for mechanical convection units.
The control system comprises of a Digital thermometer with thermostatically controlled units Microprocessor digital controller.

Model No.	Capacity (Litres)	Temperature	Number of Shelves	Number of Shelves Position	Fluctuation	Weight (Kg)
GN 0125	50	40-250C	2	3	0.75	31
GN 0126	125	40-250C	3	5	0.75	57
GN 0127	225	40-250C	3	4	0.75	80
GN 0128	225	40-200C	3	4	0.75	80
GN 0129	425	40-250C	4	5	0.75	150
GN 0130	425	40-200C	4	5	0.75	150
GN 0131	750	40-250C	5	8	0.5	200
GN 0132	1000	40-250C	6	11	0.5	240

GN 0133
Digital Tempreture control
GN 0134
Fan Circulation

GN 0135
Spare Shelve
GN 0136
Audible warning alarm

GN 0137
Door lock

Core Drill

Standards: EN 12697-27

The Portable Core Drill petrol powered engine is used for fast drilling into concrete or asphalt surfaces.
It can take up to 180mm core bit diameter capacity, Heavyduty, precision gear box – optimum gear ratio for fast and economical drilling.
Power 1.6 HP, Weight 8 Kg.

GN 0138
Handheld Core Drill with stand
GN 0139
Handheld Core Drill without stand
GN 0140
Core Bit, 50 mm dia
GN 0141
Core Bit, 100 mm dia
GN 0142
Core Bit, 150 mm dia

Core and Rock Drill

The Compact and latest design in Rock Drill machinery, suitable for working on high mountains and places with no power supply and air compressing equipment, especially suitable for temporary projects.
Carried easily as the weight is only 27kg, built up with petrol engine, air pump, rock drill.

GN 0143
Rock Drill
GN 0144
Rock Drill chisel

Demolition Breaker

The Demolition breaker is used to break hard concrete surfaces.
It has a robust metal housing and large soft padded grips which is easy to use. 2100 watt Motor.

GN 0145
Demolition Breaker complete with chisel
GN 0146
Concrete Breaker chisel

Heavy Duty Core Drilling Machine

Standards: EN 12697-27

The Heavy Duty Core Drill Machine is designed to minimize time required for cutting cores up to 150 mm diameter from concrete, asphalt and similar hard construction material.
This Core Drill is capable of handling large and small hole with stable drilling platform and dependable performance while increasing the bit life.

Heavy-duty, dual-precision ground columns and tenzalloy precision machined carriage assembly
Smooth-precision ball feed screw system, accurate hole drilling positioning and easy alignment of drill platform.

GN 0147
Core Drill with Platform, Petrol Engine 6.0 HP
Weight 140Kg, complete with core bit
GN 0148
Core Drill with Platform, Petrol Engine 10.5 HP, Weight 160Kg, complete with core bit
GN 0149
Core Bit, 50 mm dia
GN 0150
Core Bit, 100 mm dia
GN 0151
Core Bit, 150 mm dia

Masonry Saw

Standards: EN 1367-3

The Masonry Saw is a compact light weight bench saw for cutting small to medium sized building materials for example bricks, blocks, rocks, tiles and slabs.

Special clamp assembly allows specimens to be held during cutting operation.

GN 0152
Masonry Saw complete with bench, clam and saw blade
GN 0153
350mm dia. Blade
GN 0154
450mm dia. Blade
GN 0155
600mm dia. Blade

Air Compressor

The Air Compressor is easy to use and to control the air manipulation.

The Cast Iron cylinder compressor pump is long lasting and with reliable performance. 1.3 HP comes with 25 ltr or 50 ltr capacity.

GN 0156
Air Compressor, 25 liters
GN 0157
Air Compressor, 50 liters

Vacuum Pump

The Vacuum Pump is ideal for laboratory use, it removes gas molecules from a sealed volume in order to leave behind a partial vacuum.
The free air displacement is 100 Ltr/Min. Ultimate Vacuum is 0.01 (mbar). 220 V, 50-60 Hz, 1 ph

GN 0158
Vacuum Pump
GN 0159
Rubber Tubing, 1meter

Distilled Water Still Equipment

The Water Distillation unit gives high quality distilled water having an output of 4 litre/hr with a power input of 3 KW. The unique features along with the safety provisions make it an ideal equipment to obtain pure distilled water for use in general laboratories and in numerous other end uses..

GN 0160
Single Water Distillation Equipment
GN 0161
Double Water Distillation Equipment
GN 0162
Spare glass

Water Bath

The Water Bath is ideal for general laboratory use including Marshall tests. Internal surfaces of polished stainless steel and housed in a sheet steel insulated outer case. Thermostatic digital heat controlled baths 0 to 99 °C supplied complete with cover.

GN 0163
Water Bath 12 Ltr
GN 0164
Water Bath 20 Ltr
GN 0165
Water Bath 30 Ltr
GN 0166
Water Bath 48 Ltr

Temperature measurement

Standards: EN 1367-3

Selecting the correct thermometer for an application is very important, to achieve the maximum accuracy and repeatability of the temperature reading.

The selection criteria for any thermometer should include:

- measurement range
- resolution of the reading 1°C, 0.1°C or 0.01°C
- desired accuracy
- response time

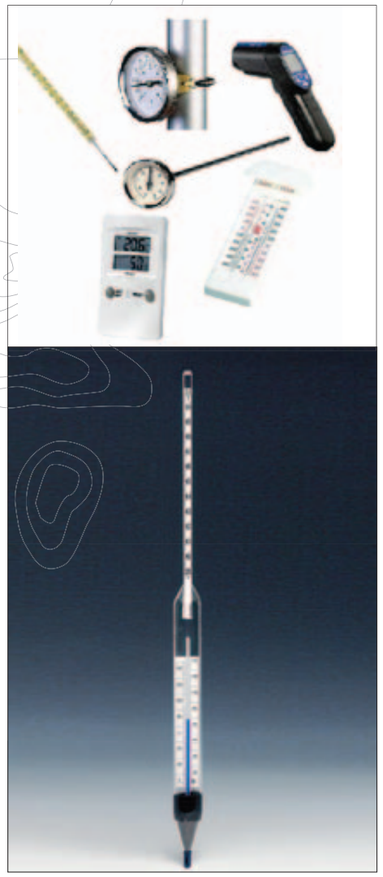
Our Thermocouple, thermometers and probes are fast to respond to changes in temperature, they also have a wide measurement range. Resistance temperature detector and more accurate. justifiably proud of the quality of both our products and service. To ensure recognition and maintenance of our quality standards we are registered to BS EN ISO 9001:2000. Original UKAS Certificates can be provided to proof that the instruments and probes have been calibrated against nationally approved standards.

Model No.	Description	Temp Range	Temp Resolution	Accuracy
GN 0167	Digital Pocket Thermometer	-50 - +250°C	0.1ºC	±0.4°C
GN 0168	Digital probe Thermometer	-49.9 to 199.9°C	0.1°C	±0.5°C
GN 0169	Digital probe Thermometer	-50 to 1000°C	1°C	±1°C
GN 0170	Digital probe Thermometer	-50 to 1000°C	0.1°C	±0.5°C
GN 0171	Thermocouple Wire 1 meter	-50 - +250°C	0.1ºC	±0.5°C
GN 0172	K type Probe	-50 to 1000°C	1°C	±1°C
GN 0173	K type Probe	-50 - +250°C	0.1ºC	±0.5°C
GN 0174	Thermal Data Loger, 4000 Reading	-40 to 125°C	0.1°C	±0.5°C

Tempreture, Hygrometer and Hydrometer Measurement

Standards: EN 1367-3

Model No.	Description	Temp Range	Resolution	Accuracy
	Glass Thermometers			
GN 0175	Glass Thermometers	-10 - +60°C	1.0 °C	±1°C
GN 0176	Glass Thermometers	-10 - +110°C	1.0 °C	±1°C
GN 0177	Glass Thermometers	-10 - +160°C	1.0 °C	±1°C
GN 0178	Glass Thermometers	-10 - +250°C	1.0 °C	±1°C
GN 0179	Glass Thermometers	-10 - +310°C	1.0 °C	±1°C
GN 0180	Min-Max Thermometer	–20 to +50°C	1.0 °C	±1°C
GN 0181	Protected Thermometer	–15 to +60°C	1.0 °C	±1°C
GN 0182	Dial Surface Thermometers	0 to 160°C	1.0 °C	±1°C
	Portable Dial Thermometers			
GN 0183	Portable Dial Thermometers	–30 to +60	1.0 °C	±1°C
GN 0184	Portable Dial Thermometers	–30 to +250	1.0 °C	±1°C
GN 0185	Portable Dial Thermometers	0 to +250	1.0 °C	±1°C
	IP Thermometers			
GN 0186	IP24C Thermometers	+95 +103	0.1°C	±0.1°C
GN 0187	IP28C Thermometers	–6 to +400	0.1°C	±0.1°C
GN 0188	IP38C Thermometers	23 to 27	2.0°C	±0.1°C
GN 0189	IP60C Thermometers	–2 to +80	0.2°C	±0.1°C
GN 0190	IP61C Thermometers	30 to 200	0.5°C	±0.1°C
GN 0191	IP89C Thermometers	–1 to +175	0.5°C	±0.1°C
	Hygrometer and Hydrometer			
GN 0192	Hydrometer, Range 0.995 to 1.030 densities (gms/cc) at 270C			
GN 0193	Hydrometer, Range 0.995 to 1.030 densities (gms/cc) at 270C			
GN 0194	Hygrometer, for humidity and temp, -10 to 60°C and 20 to 95% RH			
GN 0195	Digital Barometer, Range 0 to 1300mbar (0 to 975mmHg)			



General Laboratory Hardware

ModelNo.	Description
	Spatulas
GN 0196	Spatula, 100 mm blade with wooden handle
GN 0197	Spatula, 150 mm blade with wooden handle
GN 0198	Spatula, 200 mm blade with wooden handle
	Trowels
GN 0199	Small Trowel
GN 0200	Large Trowel
GN 0201	Float. Plasterer's type

General Laboratory Hardware

Model No.	Description
	Sample Trays
GN 0202	Sample Tray, galvanised steel, 17 x 27 x 4 cm
GN 0203	Sample Tray, galvanised steel, 27 x 46 x 4 cm
GN 0204	Sample Tray, galvanised steel, 40 x 40 x 5 cm
GN 0205	Sample Tray, galvanised steel, 60 x 60 x 6 cm
GN 0206	Sample Tray, galvanised steel, 90 x 90 x 7 cm
GN 0207	Sample Tray, galvanised steel, 120 x 120 x 5 cm
	Sample Container
GN 0208	Sample Container. Steel. Lever Lid, 0.5 litres
GN 0209	Sample Container. Steel. Lever Lid, 2.5 litres
GN 0210	Sample Container. Steel. Lever Lid, 5 litres
GN 0211	Sample Container. Steel. Lever Lid, 10 litres
GN 0212	Sample Container. Steel. Lever Lid, 15 litres
	Wire Baskets
GN 0213	Wire Basket, BS 812, EN 1367-2 65 mm dia x 80 mm deep
GN 0214	Wire Basket, BS 812, EN 1367-2 95 mm dia x 120 mm deep
GN 0215	Wire Basket, BS 812, EN 1367-2 120 mm dia x 120 mm deep
	General Items
GN 0216	Trimming Knife
GN 0217	Heat-resistant Gloves
GN 0220	Rubber Gloves

Model No.	Description
	Scoop
GN 0221	Scoop Large 7 x 11 x 4 cm
GN 0222	Scoop Medium 12 x 19 x 7 cm
GN 0223	Scoop Small 25 x 31 x 11 cm
	Beakers and Bowls
GN 0224	Bowl. 2 litre capacity, stainless steel
GN 0225	Bowl. 6 litre capacity, stainless steel
GN 0226	Bowl. 9 litre capacity, stainless steel
GN 0227	Beaker. 250 ml capacity, aluminium
GN 0228	Beaker. 500 ml capacity, aluminium
GN 0229	Beaker. 1000 ml capacity, aluminium

General Laboratory Accessories

Model No.	Description	Temp Range	Resolution	Accuracy
	Lab General Accessories			
GN 0230	Vernier Calliper, 200 mm	0 to 200mm	0.1mm	±0.1mm
GN 0231	Vernier Calliper, 300 mm	0 to 300mm	0.1mm	±0.1mm
GN 0232	Digital Vernier Calliper, 200 mm	0 to 200mm	0.1mm	±0.1mm
GN 0233	Digital Vernier Calliper, 300 mm	0 to 300mm	0.1mm	±0.1mm
GN 0234	Infrared Thermometer	–20 to+350°C	1.0 °C	±1°C
GN 0235	Hot Air dryer	+150°C		
GN 0236	Timer Clock			
GN 0237	Stop Watch			
	Hot Plates			
GN 0238	Hot Plate	10cm dia	250 °C	±1°C
GN 0239	Hot Plate	15cm dia	250 °C	±1°C
GN 0240	Hot Plate	20cm dia	250 °C	±1°C
	Laboratory Glassware			
GN 0241	Beaker 50 ml	**GN 0250**	Flask, 50 ml	
GN 0242	Beaker 100 ml	**GN 0251**	Flask, 100 ml	
GN 0243	Beaker 250 ml	**GN 0252**	Flask, 250 ml	
GN 0244	Beaker 500 ml	**GN 0253**	Flask, 500 ml	
GN 0245	Beaker 1000 ml	**GN 0254**	Flask, 1000 ml	
GN 0246	Beaker 2000 ml	**GN 0255**	Conical Flask 100 ml	
GN 0247	Conical Beaker 100 ml	**GN 0256**	Conical Flask 250 ml	
GN 0248	Conical Beaker 250 ml	**GN 0257**	Conical Flask 500 ml	
GN 0249	Conical Beaker 500 ml	**GN 0258**	Conical Flask 1000 ml	

Measuring Cylinders

Model No.	Description
	Measuring Cylinders
GN 0259	Measuring Cylinder, Glass 50 ml
GN 0260	Measuring Cylinder, Glass 100 ml
GN 0261	Measuring Cylinder, Glass 250 ml
GN 0262	Measuring Cylinder, Glass 500 ml
GN 0263	Measuring Cylinder, Glass 1000 ml
GN 0264	Measuring Cylinder, Plastic 50 ml
GN 0265	Measuring Cylinder, Plastic 100 ml

Model No.	Description
	Measuring Cylinders
GM 0266	Measuring Cylinder, Plastic 250 ml
GM 0267	Measuring Cylinder, Plastic 500 ml
GM 0268	Measuring Cylinder, Plastic 1000 ml

General Laboratory Hardware

Model No.	Description
	Measuring Cylinders
GN 0269	Evaporating Dish Ø10 cm
GN 0270	Evaporating Dish Ø12 cm
GN 0271	Evaporating Dish Ø14 cm
GN 0272	Porcelain Crucible 10 ml
GN 0273	Porcelain Crucible 15 ml
GN 0274	Porcelain Crucible 25 ml
	Bottles
GN 0275	Polythene Bottle, 1 ltr
GN 0276	Polythene Bottle, 2.5 ltr
GN 0277	Polythene Bottle, 5 ltr
GN 0278	Wash Bottle, 500 ml
GN 0279	Wash Bottle, 1000 ml
	General Items
GN 0280	Glass Stirring
GN 0281	Graduated Pipette, 0.10 ml sub-divisions
GN 0282	Graduated Pipette, 0.25 ml sub-divisions
	Bulb Pipette
GN 0283	Bosshead
GN 0284	Clamp
GN 0285	Straight edge

Model No.	Description
	Load Rings
GN 0286	Clamp Boss Load Ring 1 KN
GN 0287	Clamp Boss Load Ring 2 KN
GN 0288	Clamp Boss Load Ring 3 KN
GN 0289	Clamp Boss Load Ring 5 KN
GN 0290	Clamp Boss Load Ring 10 KN
GN 0291	Clamp Boss Load Ring 15 KN
GN 0292	Clamp Boss Load Ring 28 KN
GN 0293	Clamp Boss Load Ring 50 KN

appendix

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